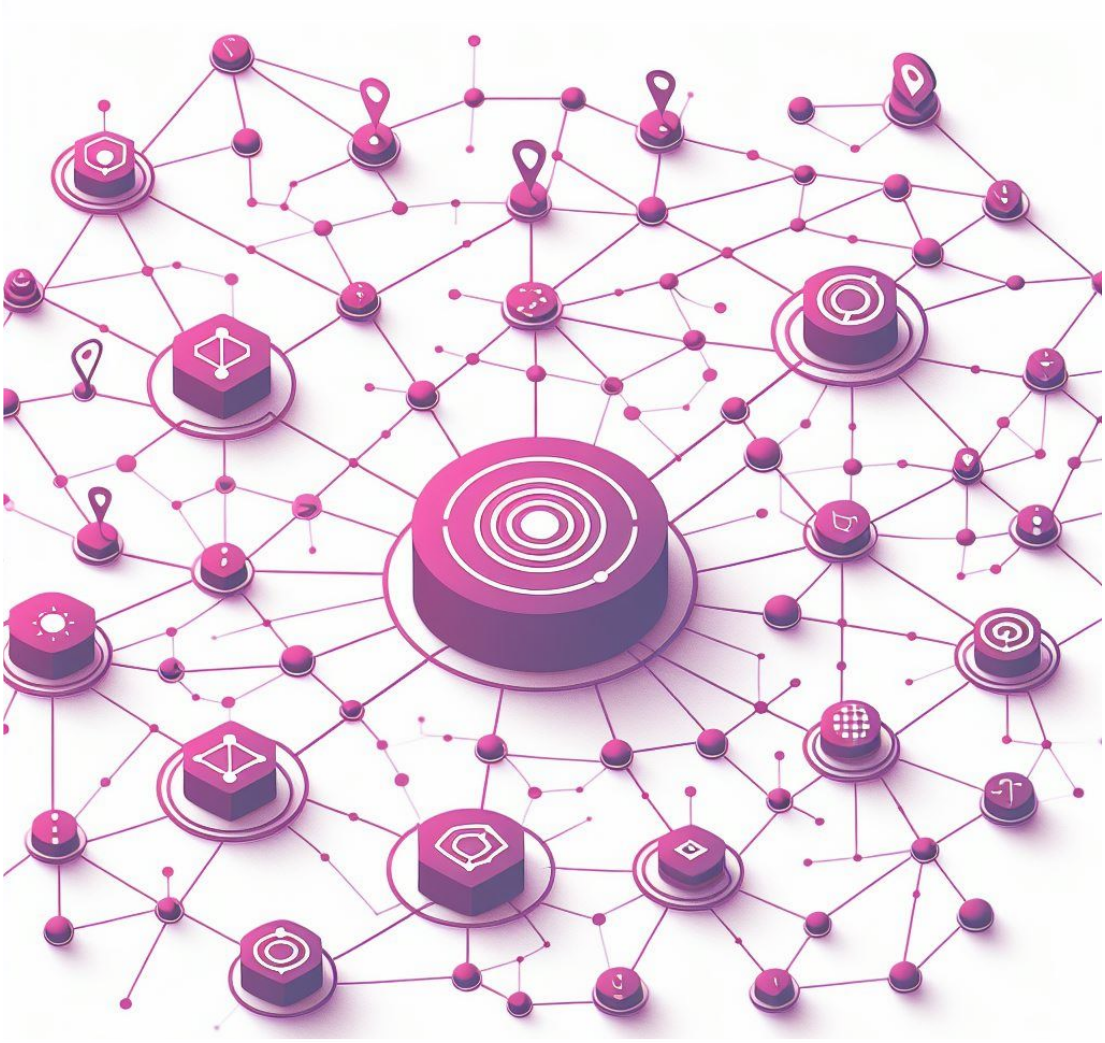
SITE MANAGEMENT DATA STANDARDS

For Data-Driven Project Performance Monitoring and Benchmarking



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Disclaimer

This Guide is a summary of site management data standards that may be adopted for the application of using digital platforms for regulatory compliance, project performance monitoring and benchmarking and does not purport to be exhaustive or applicable to all situations.

The Building and Construction Authority disclaims any liability (including any liability arising from negligence) arising in respect of any matter and the consequences of any act done or not done by any person in reliance on anything in or omitted from this Guide.

This Guide is intended to be a live document and to be amended from time to time. Please refer to the website of the Building and Construction Authority: www1.bca.gov.sg for the latest version of this Guide.

Feedback

This Guide will be updated progressively from the Version 1.0 published on 22 May 2025.

We welcome your comments about the Data Standards to help us continue to develop and improve it.

Please provide your inputs at https://go.gov.sg/datastd-feedback or scan the QR code on the right.

https://go.gov.sg/datastd-feedback

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DEX

Housing & Development Board (HDB)

Infocomm Media Development Authority (IMDA)

Intercorp Solutions Pte Ltd

Jurong Town Corporation (JTC)

Land Transport Authority (LTA)

Ministry of Manpower (MOM)

Novade Solutions Pte Ltd

Penta-Ocean Construction Company Limited

Real Estate Developers' Association of Singapore (REDAS)

SoilBuild Group Holdings Ltd

Teambuild Construction Pte Ltd

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SECTION 1

INTRODUCTION

Regulators, clients and contractors are increasingly stepping up efforts to unlock the usefulness of data captured across different digital platforms used by construction projects. Establishing a set of industry-wide data standards is key to integrating these data to achieve data-driven decision-making (see figure 1).

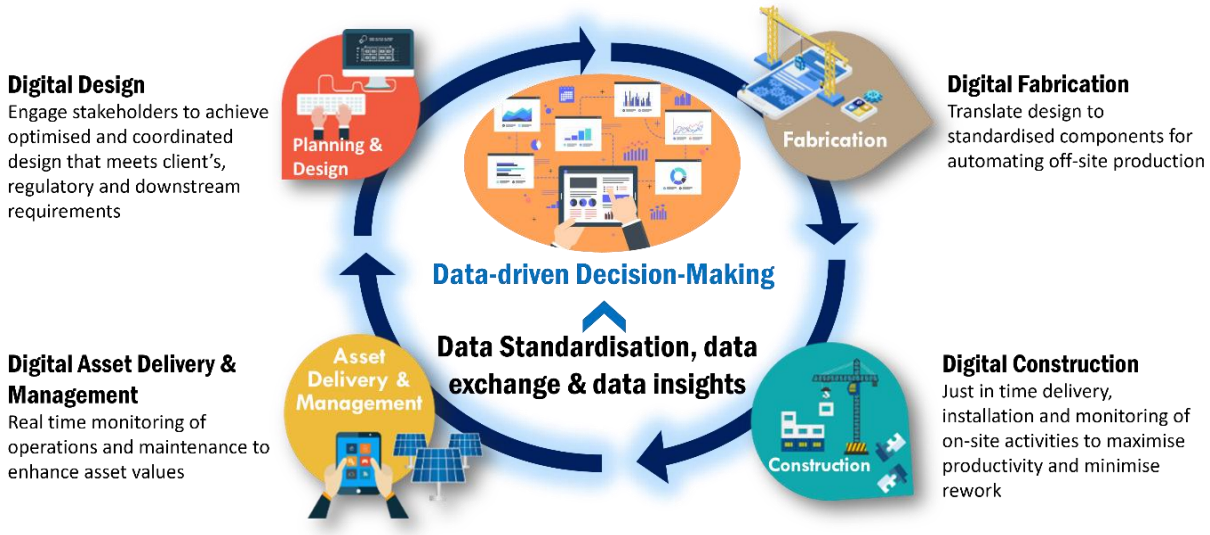

Figure 1: Harness Data for Better Decision-Making

Today's Data Silos and Manual Reporting Process

Collection and management of data from multiple sources is a time consuming and error-prone process due to the lack of data standardisation (see figure 2). As a result, project stakeholders are unable to utilise these data to monitor project health and performance.

Firstly, contractors have to manually prepare different reports to meet regulatory and client's requirements. They also struggle to efficiently utilise project data scattered across multiple sources for effective project management. Secondly, reports received by regulators and clients from various contractors are predominantly descriptive and presented in diverse formats that are unsuitable for machine processing. This complicates the generation of insights and the performance of industry-level benchmarking.

SECTION 1

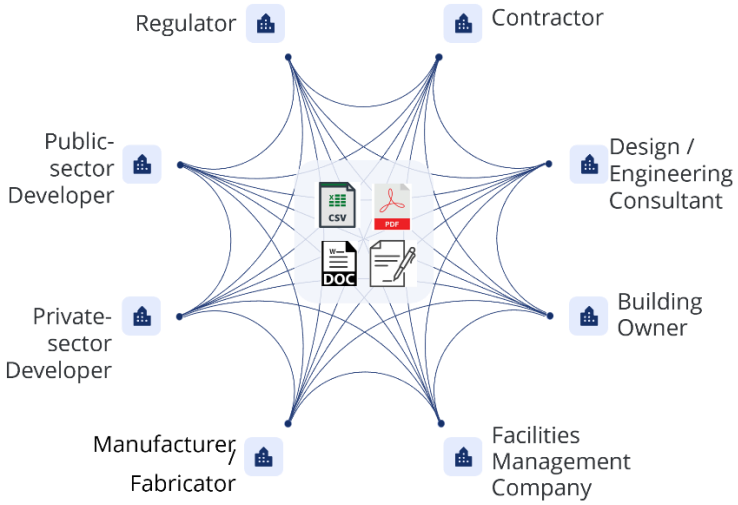

Figure 2: Challenges in Harnessing Data of Different Formats from Various Systems

A Proof-of-Concept (PoC) Demonstrated Structured Data Exchange

A PoC was conducted to demonstrate structured data exchange via a single point of connectivity (i.e. SGBuildex) developed by IMDA in 2024. It involved standardisation of 5 datasets needed by BCA, HDB and REDAS for regulatory compliance and project management purposes. Based on the data standards, 5 contractors and 3 solution providers were able to submit structured data using a set of data exchange Application Programming Interfaces (APIs) successfully.

The key takeaways are as follows:

- PoC participants recognised the **value of data standardisation for interoperability, data exchange and generating insights for informed decision-making.**
- **Data for regulatory compliance and project delivery should be harmonised** to ease data preparation, submission and analysis efforts.
- **A single point of connectivity (i.e. SGBuildex) with comprehensive OpenAPI** for data exchange **reduced the cost and effort** of data submission.
- Standardised data enabled data users to harness it effectively for **better insights** and **benchmarking** at both **project** and **industry levels for improvement.**

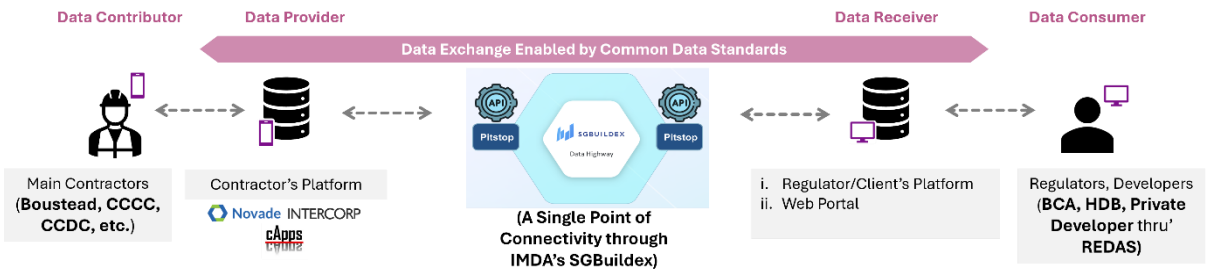

Figure 3: PoC Demonstrated Structured Data Exchange through SGBuildex

SECTION 2

OBJECTIVES

The site management data standardisation effort is a crucial step forward in addressing the challenges faced by the industry in harnessing data locked in multiple digital platforms[1].

Establishing common data standards and exchange tools allow data consumers and contributors the flexibility to exchange data from their preferred digital platforms via a single point of connectivity. This not only **reduces the time** and **effort in report preparation** but also **provides real-time project performance data for timely insights and informed decisions**. Data collected over time could be used for benchmarking across various projects.

The envisaged data-driven approach, as depicted in figure 4, involves **data being standardised, harmonised, and exchanged seamlessly between various stakeholders from different data sources for multiple purposes**. This enables stakeholders to **derive actionable insights and implement early preventive and predictive intervention, leading to more informed decisions and better project delivery outcomes**.

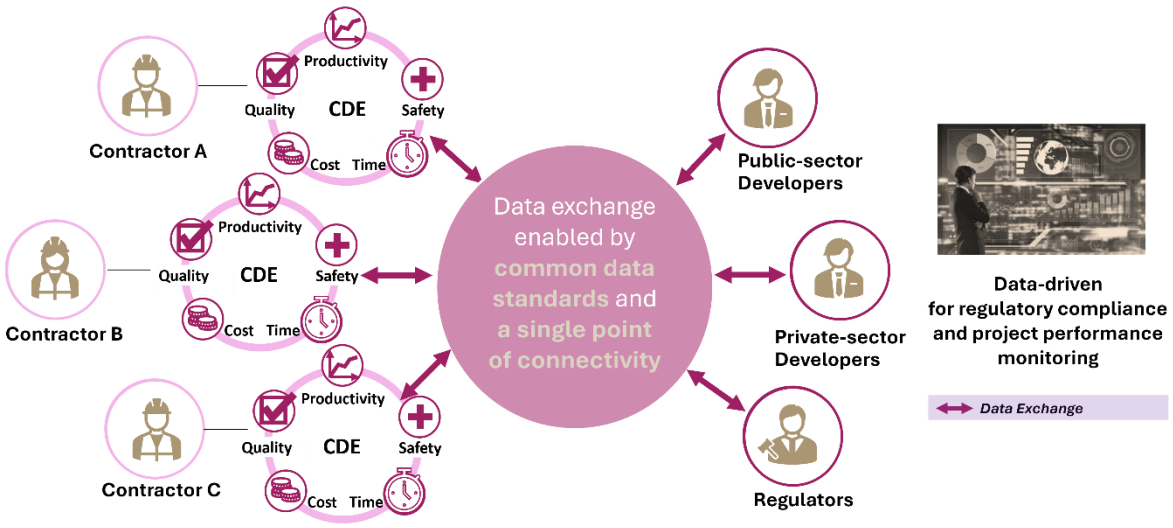

Figure 4: Envisaged Data-driven Project Performance Monitoring and Benchmarking

1 Digital platforms refer to Common Data Environment (CDE) platforms or Site Management Platforms (SMP). CDE serves as a unified platform for storing, sharing and accessing project data, promoting transparency and efficiency across the project stage. The SMP can form part of the CDE when connected through APIs for site management.

SECTION 3

SITE MANAGEMENT DATA STANDARDS

Site management data standards cover the 5 key aspects of Built Environment project performance, namely safety, productivity, quality, time and cost, from both regulatory and project delivery perspectives (see figure 5).

Regulatory data requirements serve as a baseline, while project delivery data requirements constitute a broader set that also extends to include time and cost for better site and project management. The following sub-sections detail the respective data requirements. Solution providers can refer to the OpenAPI specification (SGBuildex APIs) to establish data exchange with SGBuildex.

Site Management Data Standards for Regulatory Compliance and Project Delivery					
Safety		**Productivity**	**Quality**	**Time**	**Cost**
Structural Safety	Environmental Health and Safety (EHS)	Construction Productivity	CONQUAS[2] / Defects	Progress Monitoring	Variation Order/Progress Claim

Figure 5: Scope of Site Management Data Standards

2 CONQUAS is a mandatory requirement for all private building projects built on Government Land Sales sites and all public sector building projects with an estimated construction cost (without contingency sum) of $10 million or more. CONQUAS is also imposed on private residential projects or mixed development projects with residential component of new and poor performing developers through the Housing Developers (Control and Licensing) Act and on building projects under the BE Transformation Bonus Gross Floor Area Incentive Scheme.

SECTION 3

3.1 Safety Data Standardisation [Updated]

This section describes structured data[3] standards for **Structural Safety** and **Environmental, Health and Safety (EHS)**. These data can be collected using Site Management Platforms (SMP) and submitted to BCA (for Structural Safety) or Project Developer (for EHS) through a set of APIs based on the standards.

Structural Safety datasets comprise essential piling, material test, ground monitoring and other site data for audits and inspections purposes, as outlined below and detailed in Appendix A.

Piling Data

- Piling Installation Records contain all technical details of the piling process, including installation methods, pile penetration length, pile verticality, soil type and compliance verification for each pile installed during construction works.
- Working Load Test contains the results of load tests performed on working piles to verify their ability to meet the design requirements and safety factors.
- Ultimate Load Test contains the results of load tests performed on test piles to determine maximum load-bearing capacity and verify design parameters.

Material Test Data

- Concrete Cube Test (Laboratory) data is generated by the test laboratory and include the test cube details, location of the test cube, and the cube strength at the specified test date.
- Concrete Cube Test (Contractor) data is compiled by the builder, who combines the laboratory data with additional project details, test results as verified by RE/RTO, and rectification remarks by Qualified Person (QP).
- Steel Element Test contains information on steel fabricators and results of tests performed on structural steel to determine tensile strength required to meet the design requirements.
- Steel Rebar Test contains the results of tensile, bend and rebend tests performed on steel rebar to determine mechanical properties required to meet design requirements.

Ground Monitoring Data

- Site Inspection & Approval Records (ERSS Annex C-1) are generated by the builder to obtain approvals from the appropriate Qualified Person (QP)/ Accredited Checker (AC) that the ERSS is in accordance with the design, before proceeding with any excavation at critical stages and at every support or strut level.

3 Structured data is organised in a clear and predictable format that machines can easily read and process. It is typically arranged in rows and columns which makes it simple to store, search and analyse automatically, such as spreadsheets and databases in CSV and JSON format.

- Certification & Monitoring Building Settlement (Annex D) contains building settlement data at specified storeys and at the final storey during construction to ensure they remain within the allowable limits, as approved by Qualified Person (QP).

Other Site Data

- Site Progress reports the percentage of on-site progress for key construction milestones such as demolition, ERSS, piling, substructure and superstructure.
- Qualified Person (QP) and Site Supervisor (SS) Attendance documents the attendance of QPs and SSs who visit the site for meetings or inspections.
- Notification to Commissioner of Building Control (CBC) contains submission of project details and status updates requiring notification to the CBC by Qualified Person Supervision (e.g. excessive movements, test failures, critical works).
- Project Document[4] include the details of project documents in unstructured data file format (e.g. pdf, doc, xls, ppt).

Environmental, Health and Safety datasets comprise Safety Inspection Observations (both negative and positive), e-Permit to Work (ePTW), and Environmental Audits for site safety management. These datasets will be released in 1H2026.

These datasets aim to standardise data collected for regulatory compliance whilst also providing valuable insights for project management purposes (see examples of performance metrics in table 1 and table 2 respectively).

Table 1 - Structural Safety [Updated]

Report/Dataset	Metric
Piling Installation Records	• Percentage of type of pile use • Total number of piles • No. of piles installed • No. of short piles • Piling progress
Working Load Test (WLT) Ultimate Load Test (ULT)	• No. of satisfactory/unsatisfactory WLT/ULT • No. of WLT/ULT carried out by type • No. of WLT/ULT that confirmed pile design
Concrete Cube Test (Laboratory) Concrete Cube Test (Contractor)	• No. of satisfactory/unsatisfactory cube tests • Strength of concrete over time • No. of cube tests carried out

4 This project document dataset comprises unstructured documents that are required to be submitted to BCA for audits and checks.

	• Strength of concrete by supplier • Number of additional tests done
Steel Element Test	• No. of satisfactory/unsatisfactory steel rebar/element tests • No. of steel rebar/element tests carried out by type • Strength of steel rebar/element • Strength of steel rebar/element by supplier • No. of outstanding rectification works
Steel Rebar Test	
Site Inspection & Approval Records (ERSS Annex C-1)	• Annex C endorsed before commencing next stage of works • No of strut (or support) levels within this ERSS report
Certification & Monitoring Building Settlement (Annex D)	• Maximum building settlement • No. of building settlement that exceed design limits • No. of outstanding Annex D yet to be filled
Site Progress	• No. of blocks/zones within the project site • Demolition works progress • Piling works progress • Basement/substructure works progress • Superstructure works progress • ERSS works progress
QP and SS Attendance	• No. of times QP visits site
Notification to Commissioner of Building Control (CBC)	• No. of critical issues
Project Document	Nil

SECTION 3

Table 2 – Environmental, Health and Safety (EHS) [Pending Updates]

Report/Dataset	Metric
Safety Inspection Report - Site Safety Inspection Negative Observation (Non-Conformity Report (NCR)	• No. of safety non-conformances by project • Top non- conformances highlighted by consultants /safety team • No. of non- conformances created by consultants and contractor management/safety team • No. of various types of safety non-conformances • No. of safety non- conformances based on trades • No. of safety non-conformances based on subcontractors • Outstanding/overdue non-compliance (>3 days) by project • Outstanding/overdue non-compliance (>7 days) by project
- Site Safety Inspection Positive Observation	Nil
e-Permit to Work (PTW)	• No. of PTWs issued by project • No. of types of PTW
Environmental Audits (Construction Noise, Vector Control/Housekeeping, Erosion Control)	Pending Updates

SECTION 3

3.2 Construction Productivity Data Standardisation [Updated]

This section describes the enhanced manpower data requirements for the submission of Construction Productivity Data (CPD) to BCA. The enhanced dataset consolidates existing data templates under the Electronic Productivity Submission System (ePSS) into a single template, with additional data fields to capture more accurate productivity data. The list of worker trades has also been streamlined into broader categories to facilitate the registration of workers performing multiple functions (see Appendix C).

CPD comprises **manpower utilisation** and **manpower distribution** datasets, as detailed in Appendix C. **Manpower utilisation data** captures the actual attendance of workers at each project site or off-site fabrication facility across various trades (e.g. precast, structural steel, prefabricated mechanical, electrical and plumbing works). **Manpower distribution data**, applicable to off-site fabricators, allows fabricators to allocate manpower utilised across the respective projects in which they are involved. These two datasets aim to ensure that consistent manpower data can be collected and analysed to establish project and industry-level productivity indices (see examples in Table 3).

Beyond regulatory compliance, projects can utilise the collected manpower data collected, along with additional captured data, for broader applications such as labour productivity analysis and manpower planning.

Table 3 – Manpower Utilisation and Distribution [Updated]

Report/Dataset	Metric
Manpower Utilisation Data	• Site Productivity by project, typology and industry • Total Mandays by project/fabricator, trade and builder (i.e. main contractors and subcontractors) • Total Unique count of workers by project/fabricator, trade and builder (i.e. main contractors and subcontractors)
Manpower Distribution Data	• Proportion of Mandays utilised by off-site fabricators per project

SECTION 3

3.3 Quality Data Standardisation (Future Release)

3.4 Time Data Standardisation (Future Release)

3.5 Cost Data Standardisation (Future Release)

SECTION 4

CONCLUSION

Site management data standards serve as the critical foundation for the transformation of the industry into one that is data-driven, where stakeholders are able to harness data for analytics and insights to make near real-time and informed decisions to uplift performance at project and enterprise level.

Appendix A – Safety Datasets (Structural Safety)

Piling Installation Records

Data Element Name (Data Field)	Definition	Mandatory/ Optional	Data Field Type	Data Validation Rule - Format
Project Reference Number	Project Reference Number (e.g. A1234-12345-2022)	Mandatory	string	Field length = 16 1st character: Alphabet is either A or E 2nd-5th character: Number 6th character: Hyphen 7th-11th character: alphanumeric 12th character : Hyphen 13th-16th character: Number
Project Title	Project Title (e.g. Proposed Construction of 50 Story Mixed Commercial & Residential Building)	Mandatory	string	Field length = max 1000
Project Location Description	Project Location Description (e.g. 52 Jurong Gateway Road Singapore 608549, MK01 LOT 00001A, Interchange between Jalan Bahar and Pioneer Road)	Mandatory	string	Field length = max 2000
Project Main Contractor Company Name	Project main contractor company name as in ACRA	Mandatory	string	
Project Main Contractor Company Unique Entity Number	Project main contractor company Unique Entity Number (UEN) as in ACRA	Mandatory	string	Field length = 9-10 Businesses registered with ACRA(1) : NNNNNNNNX Local companies registered with ACRA(1) : YYYYNNNNNX All other entities which will be issued new UEN : TYYPQNNNNX where 'N' = A number 'P' = An alphabetical letter

				'Q' = An alpha-numeric digit 'PQ' = Entity Type(2) 'TYY' / 'SYY' / 'YYYY' = Year of issuance(3) 'X' = A check alphabet For example, the UEN for a limited liability partnership (LLP) formed on 1 January 2009 could be 'T09LL0001B' (1) No change from existing ACRA Registration Number (2) E.g. 'LL' = 'Limited Liability Partnership' (3) 'T' represents 20, 'S' represents '19' and 'R' represents '18'. E.g. T08 means year 2008, S99 means year 1999 and R00 means year 1800.
Project Piling Contractor Company Name	Project piling contractor company name as in ACRA	Mandatory	string	
Project Piling Contractor Company Unique Entity Number	Project piling contractor company Unique Entity Number (UEN) as in ACRA	Mandatory	string	Field length = 9-10 Businesses registered with ACRA(1) : NNNNNNNNX Local companies registered with ACRA(1) : YYYYNNNNNX All other entities which will be issued new UEN : TYYPQNNNNX where 'N' = A number 'P' = An alphabetical letter 'Q' = An alpha-numeric digit 'PQ' = Entity Type(2) 'TYY' / 'SYY' / 'YYYY' = Year of issuance(3) 'X' = A check alphabet For example, the UEN for a limited liability partnership (LLP) formed on 1 January 2009 could be 'T09LL0001B' (1) No change from existing ACRA Registration Number

				(2) E.g. 'LL' = 'Limited Liability Partnership' (3) 'T' represents 20, 'S' represents '19' and 'R' represents '18'. E.g. T08 means year 2008, S99 means year 1999 and R00 means year 1800.
Project Land Surveyor Company Name	Project land surveyor company name as in ACRA	Optional	string	
Project Land Surveyor Company Unique Entity Number	Project land surveyor company Unique Entity Number (UEN) as in ACRA	Optional	string	Field length = 9-10 Businesses registered with ACRA(1) : NNNNNNNNX Local companies registered with ACRA(1) : YYYYNNNNNX All other entities which will be issued new UEN : TYYPQNNNNX where 'N' = A number 'P' = An alphabetical letter 'Q' = An alpha-numeric digit 'PQ' = Entity Type(2) 'TYY' / 'SYY' / 'YYYY' = Year of issuance(3) 'X' = A check alphabet For example, the UEN for a limited liability partnership (LLP) formed on 1 January 2009 could be 'T09LL0001B' (1) No change from existing ACRA Registration Number (2) E.g. 'LL' = 'Limited Liability Partnership' (3) 'T' represents 20, 'S' represents '19' and 'R' represents '18'. E.g. T08 means year 2008, S99 means year 1999 and R00 means year 1800.
Technical Controller Person Name	Technical controller name as in Unique Identification Number (UIN), i.e. National Registration Identity Card	Mandatory	string	Field length = maximum 66

	(NRIC) or Foreign Identification Number (FIN)			
Registered Engineer Registered Technical Officer Person Name	Registered Engineer / Registered Technical Officer (RE/RTO) name as in Unique Identification Number (UIN) i.e. National Registration Identity Card (NRIC) or Foreign Identification Number (FIN)	Mandatory	string	Field length = maximum 66
Registered Engineer Registered Technical Officer Registration Number	Registered Engineer / Registered Technical Officer (RE/RTO) registration number as registered with Institute of Engineers Singapore (IES) (e.g. RE-1234, RTO-1234)	Mandatory	string	Field length = 7-8 Field value = Alphanumeric, including special character i.e. hyphen
Qualified Person Supervision Person Name	Qualified person (supervision) (structural) name as in Unique Identification Number (UIN), i.e. National Registration Identity Card (NRIC) or Foreign Identification Number (FIN)	Mandatory	string	Field length = maximum 66
Qualified Person Supervision Registration Number	Qualified person (supervision) registration number as registered with Professional Engineers Board (PEB) (e.g. 0123)	Mandatory	string	Field length = 4 Field value = Numeric, may have led zero
Qualified Person Geotechnical Person Name	Qualified personnel (geotechnical) name as in Unique Identification Number (UIN), i.e. National Registration Identity Card (NRIC) or Foreign Identification Number (FIN) (i.e. required for building 30 storey or higher)	Optional	string	Field length = maximum 66

Qualified Person Geotechnical Registration Number	Qualified personnel (geotechnical) registration number as registered with Professional Engineers Board (PEB) (i.e. required for building 30 storey or higher) (e.g. 0123)	Optional	string	Field length = 4 Field value = Numeric, may have leading zero
Land Surveyor Person Name	Land surveyor name as in Unique Identification Number (UIN), i.e. National Registration Identity Card (NRIC) or Foreign Identification Number (FIN)	Optional	string	Field length = maximum 66
Land Surveyor Registration Number	Land surveyor registration number as registered with Land Surveyors Board (LSB) (e.g. 123)	Optional	integer	Field length = maximum 3
Project Total Piles	Total number of piles for the project	Mandatory	integer	
Structural Plan Number	Structure plan number	Mandatory	string	
Pile Reference Number	Pile reference number as per approved piling plan	Mandatory	string	
Piling Installation Date	Date of piling installation. (i.e. best practice for Piling Installation Record to be sent as and when, upon completion of piling installation).	Mandatory	datetime	Field length = 25 YYYY-MM-DD[T]hh:mm:ss+hh:mm e.g. 2015-01-01T12:00:00+08:00 for UTC +8
Project Piling Work Type	Project Piling work type [Selection: 1 - Driven Reinforced Concrete Pile (Displacement Type); 2 - Driven Steel Micro Pile (Displacement Type); 3 - Jack Reinforced Concrete Pile (Displacement Type); 4 - Spun Pile (Displacement Type); 5 - Steel Pile (Displacement Type); 6 - Other Displacement Pile (including Load Bearing Steel Pipe Wall, etc);	Mandatory	integer	Field length = maximum 2 Minimum value = 1 Maximum value = 12

	7 - Barrette Pile (Replacement Type); 8 - Bored Pile (Replacement Type); 9 - Bored Micro Pile (Replacement Type); 10 - Caisson (Replacement Type); 11 - Diaphragm Wall (Replacement Type); 12 - Other Replacement Pile]			
Project Piling Work Type Other	Description of other piling work type (i.e. to populate if "Other Displacement Pile" or "Other Replacement Pile" is selected for Project Piling Work Type)	Optional	string	Mandatory if project_piling_work_type = 6 or 12
Project Piling Foundation Type Other	Description of other piling foundation type (i.e. to populate if "Other Displacement Pile" or "Other Replacement Pile" is selected for Project Piling Work Type)	Optional	string	Mandatory if project_piling_work_type = 6 or 12
Pile X Easting	As-built Singapore Vertical Datum (SVY21) easting coordinates of piles in metres	Mandatory	double	up to 3 d.p
Pile Y Northing	As-built Singapore Vertical Datum (SVY21) northing coordinates of piles in metres	Mandatory	double	up to 3 d.p
Pile Cut Off Level	As-built elevation at which the pile is cut off or terminated according to Singapore Height Datum (SHD) in metres	Mandatory	double	up to 3 d.p
Pile Toe Level	As-built elevation of the bottom of a pile where it meets the ground or soil according to Singapore Height Datum (SHD) in metres	Mandatory	double	up to 3 d.p
Pile Diameter Longest Length	Diameter or length of longest side of pile in millimetres	Mandatory	integer	

Pile Width	Length of shorter side of pile in millimetres (no value if pile is circular)	Optional	integer	
Pile Design Penetration Length	Design penetration length of pile from cut off level in metres	Mandatory	double	up to 3 d.p
Pile As Built Length	Actual penetration length of pile from cut off level in metres	Mandatory	double	up to 3 d.p
Pile Design Socketing Length	Design socketing length into bedrock in metres as in approved piling plan (value 0 if no requirement for socketing) (i.e. to populate if replacement type pile is selected for Project Piling Work Type)	Optional	double	up to 3 d.p Mandatory if project_piling_work_type = 7, 8, 9, 10, 11 or 12
Pile Actual Socketing Length	Actual socketing length into bedrock in metres as in approved piling plan (value 0 if no requirement for socketing) (i.e. to populate if replacement type pile is selected for Project Piling Work Type)	Optional	double	up to 3 d.p Mandatory if project_piling_work_type = 7, 8, 9, 10, 11 or 12
Pile Design Embedment Length	Design embedment length into competent soil in metres as in approved piling plan (value 0 if no requirement for embedment) (i.e. to populate if replacement type pile is selected for Project Piling Work Type)	Optional	double	up to 3 d.p Mandatory if project_piling_work_type = 7, 8, 9, 10, 11 or 12
Pile Actual Embedment Length	Design embedment length into competent soil in metres as in approved piling plan (value 0 if no requirement for embedment) (i.e. to populate if replacement type pile is selected for Project Piling Work Type)	Optional	double	up to 3 d.p Mandatory if project_piling_work_type = 7, 8, 9, 10, 11 or 12
Pile Local X Eccentricity	Horizontal distance between the centerline of the pile and the specified location on the pile, in the local X direction, in millimetres	Optional	integer	

Pile Local Y Eccentricity	Horizontal distance between the centerline of the pile and the specified location on the pile, in the local Y direction, in millimetres	Optional	integer	
Pile Zone Borehole Number	Borehole number that the zone pile is located in, according to pile design (e.g. BH01, EBH01)	Optional	string	
Pile Boring Start Date Time	Date and time when boring or jacking of piles started (i.e. with reference to BCA Piling Inspection Form)	Optional	datetime	Field length = 25 YYYY-MM-DD[T]hh:mm:ss+hh:mm e.g. 2015-01-01T12:00:00+08:00 for UTC +8
Pile Boring Complete Date Time	Date and time when boring or jacking of piles completed (i.e. with reference to BCA Piling Inspection Form)	Optional	datetime	Field length = 25 YYYY-MM-DD[T]hh:mm:ss+hh:mm e.g. 2015-01-01T12:00:00+08:00 for UTC +8
Pile Verticality	Verticality ratio reading as measured by piling machine (ratio as in 1:value) (i.e. with reference to BCA Piling Inspection Form)	Optional	integer	
Pile Reinforcement Bar Number Size	Number of reinforcement bar, type of reinforcement bar and reinforcement bar size/diameter (e.g. 10H16) (i.e. with reference to BCA Piling Inspection Form)	Optional	string	
Pile Reinforcement Bar Length	Length of reinforcement bar in metres (i.e. with reference to BCA Piling Inspection Form)	Optional	double	up to 3 d.p
Pile Reinforcement Link Size Spacing	Type of reinforcement bar, reinforcement bar size/diameter, reinforcement link spacing in millimetres (e.g. H10-200) (i.e. with reference to BCA Piling Inspection Form)	Optional	string	

Pile Spacer Size	Size of pile spacer in millimetres (i.e. with reference to BCA Piling Inspection Form)	Optional	integer	
Pile Spacer Spacing	Spacing of pile spacer in millimetres (i.e. with reference to BCA Piling Inspection Form)	Optional	integer	
Pile Concreting Method	Method of pile concreting (i.e. with reference to BCA Piling Inspection Form) [Selection: 1 - Dry; 2 - Tremie; 3 - Other Concreting Method]	Optional	integer	Field length = 1 Minimum value = 1 Maximum value = 3
Pile Concreting Method Other	Description of other concreting method (i.e. to populate if "Other Concreting Method" is selected for Pile Concreting Method)	Optional	string	Mandatory if pile_concreting_method = 3
Pile Concrete Grade	Grade of pile concrete (e.g. C40/50, C32/40) (i.e. with reference to BCA Piling Inspection Form)	Mandatory	string	
Pile Toe Cleaned	Pile toe cleaned (i.e. with reference to BCA Piling Inspection Form) [Selection: True - Yes; False - No]	Optional	boolean	
Pile Concreting Start Date Time	Date and time when concreting started (i.e. with reference to BCA Piling Inspection Form)	Optional	datetime	Field length = 25 YYYY-MM-DD[T]hh:mm:ss+hh:mm e.g. 2015-01-01T12:00:00+08:00 for UTC +8
Pile Concreting Complete Date Time	Date and time when concreting completed (i.e. with reference to BCA Piling Inspection Form)	Optional	datetime	Field length = 25 YYYY-MM-DD[T]hh:mm:ss+hh:mm e.g. 2015-01-01T12:00:00+08:00 for UTC +8

Pile Calculated Concrete Volume	Calculated volume of pile concrete in cubic metres (i.e. with reference to BCA Piling Inspection Form)	Optional	double	up to 3 d.p
Pile Actual Concrete Volume	Actual volume of pile concrete in cubic metres (i.e. with reference to BCA Piling Inspection Form)	Optional	double	up to 3 d.p
Project Pile Concrete Supplier Company Name	Project pile concrete supplier company name (i.e. with reference to BCA Piling Inspection Form)	Optional	string	
Competent Soil Standard Penetration Test Requirement	N value of soil standard penetration test (i.e. with reference to BCA Piling Inspection Form)	Optional	integer	
Competent Soil Depth	Depth from cut off level where competent soil encountered in metres (i.e. with reference to BCA Piling Inspection Form)	Optional	double	up to 3 d.p

Working Load Test (WLT) [New]

Data Element Name (Data Field)	Definition	Mandatory/ Optional	Data Field Type	Data Validation Rule - Format
Project Reference Number	Project Reference Number (e.g. A1234-12345-2022)	Mandatory	string	Field length = 16 1st character: Alphabet is either A or E 2nd-5th character: Number 6th character: Hyphen 7th-11th character: Alphanumeric 12th character: Hyphen 13th-16th character: Number
Project Title	Project Title (e.g. Proposed Construction of 50 Story Mixed Commercial & Residential Building)	Mandatory	string	Field length = Maximum 1000
Project Location Description	Project Location Description (e.g. 52 Jurong Gateway Road Singapore 608549, MK01 LOT 00001A, Interchange between Jalan Bahar and Pioneer Road)	Mandatory	string	Field length = Maximum 2000
Project Main Contractor Company Name	Project main contractor company name as in ACRA	Mandatory	string	
Project Main Contractor Company Unique Entity Number	Project main contractor company Unique Entity Number (UEN) as in ACRA	Mandatory	string	Field length = 9-10 Businesses registered with ACRA(1) : NNNNNNNNX Local companies registered with ACRA(1) : YYYYNNNNNX All other entities which will be issued new UEN : TYYPQNNNNX where 'N' = A number 'P' = An alphabetical letter 'Q' = An alpha-numeric digit 'PQ' = Entity Type(2)

				'TYY' / 'SYY' / 'YYYY' = Year of issuance(3) 'X' = A check alphabet For example, the UEN for a limited liability partnership (LLP) formed on 1 January 2009 could be 'T09LL0001B' (1) No change from existing ACRA Registration Number (2) E.g. 'LL' = 'Limited Liability Partnership' (3) 'T' represents 20, 'S' represents '19' and 'R' represents '18'. E.g. T08 means year 2008, S99 means year 1999 and R00 means year 1800.
Technical Controller Person Name	Technical controller name as in Unique Identification Number (UIN), i.e. National Registration Identity Card (NRIC) or Foreign Identification Number (FIN)	Mandatory	string	Field length = Maximum 66
Registered Engineer Registered Technical Officer Person Name	Registered Engineer / Registered Technical Officer (RE/RTO) name as in Unique Identification Number (UIN), i.e. National Registration Identity Card (NRIC) or Foreign Identification Number (FIN)	Mandatory	string	Field length = Maximum 66
Registered Engineer Registered Technical Officer Registration Number	Registered Engineer / Registered Technical Officer (RE/RTO) registration number as registered with Institute of Engineers Singapore (IES) (e.g. RE-1234, RTO-1234)	Mandatory	string	Field length = 7-8 Field value = Alphanumeric, including special character i.e. hyphen
Qualified Person Supervision Person Name	Qualified person (supervision) name as in Unique Identification Number (UIN), i.e. National Registration Identity Card (NRIC) or Foreign Identification Number (FIN)	Mandatory	string	Field length = Maximum 66

Qualified Person Supervision Registration Number	Qualified person (supervision) registration number as registered with Professional Engineers Board (PEB) (e.g. 0123)	Mandatory	string	Field length = 4 Field value = Numeric, may have led zero
Qualified Person Geotechnical Person Name	Qualified personnel (geotechnical) name as in Unique Identification Number (UIN), i.e. National Registration Identity Card (NRIC) or Foreign Identification Number (FIN) (i.e. required for building 30 storey or higher)	Optional	string	Field length = Maximum 66
Qualified Person Geotechnical Registration Number	Qualified personnel (geotechnical) registration number as registered with Professional Engineers Board (PEB) (i.e. required for building 30 storey or higher) (e.g. 0123)	Optional	string	Field length = 4 Field value = Numeric, may have leading zero
Project Total Working Load Test	Total number of Working Load Test (WLT) performed for project (i.e. to update number if there is/are additional WLT performed, arising from earlier failed WLT)	Mandatory	integer	
Structural Plan Number	Structure plan number	Mandatory	string	
Pile Reference Number	Pile reference number as per approved piling plan	Mandatory	string	
Working Load Test Date	Date when Working Load Test (WLT) is performed (i.e. best practice for WLT to be sent as and when, upon completion)	Mandatory	datetime	Field length = 25 YYYY-MM-DD[T]hh:mm:ss+hh:mm e.g. 2015-01-01T12:00:00+08:00 for UTC +8
Working Load Test Method	Method adopted for Working Load Test (WLT) [Selection: 1 - Reaction Test Pile (e.g. Kentledge, Ground Anchor, Tension Pile etc);	Mandatory	integer	Field length = 1 Minimum value = 1 Maximum value = 4

	2 - Bi-directional Load Test; 3 - Rapid Load Test; 4 - Other WLT Method]			
Working Load Test Method Other	Description of other Working Load Test (WLT) method (i.e. to populate if "Other WLT Method" is selected for Working Load Test Method)	Optional	string	Mandatory if working_load_test_method = 4
Pile Diameter	Diameter or length of longest side of pile in millimetres	Mandatory	integer	
Pile As Built Length	As-built length of a pile as measured on site from the cut-off level in metres	Mandatory	double	up to 3 d.p
Pile Working Load	Design working load of tested pile, in kilonewton	Mandatory	integer	
Pile Head Settlement 1.5 Time Working Load	Measured pile settlement at 1.5 time working load, in millimetres	Mandatory	double	up to 3 d.p
Pile Head Settlement 2.0 Time Working Load	Measured pile settlement at 2.0 time working load, in millimetres	Mandatory	double	up to 3 d.p
Working Load Test Result	Result of Working Load Test (WLT) [Selection: 1 - Passed; 2 - Failed (Downgrade Single Pile with Additional 2 WLT); 3 - Failed (Downgrade All Piles for Whole Zone with Additional 2 WLT); 4 - Failed (Downgrade All Piles for Whole Zone without Additional 2 WLT)];	Mandatory	integer	Field length = 1 Minimum value = 1 Maximum value = 4
Additional Working Load Test	Indicate if this Working Load Test (WLT) is the additional test required due to an earlier failed WLT [Selection:	Mandatory	boolean	

	True - Yes; False - No]			
Working Load Test Amendment Remarks	Amendment remarks for the Working Load Test (WLT) that requires amendment (i.e. to populate if "Failed" is selected for Working Load Test Result)	Optional	string	Mandatory if working_load_test_result = 2, 3 or 4
Working Load Test Amendment Date	Date when Working Load Test (WLT) amendment is performed (i.e. to populate if "Failed" is selected for Working Load Test Result)	Optional	date	Field length = 25 YYYY-MM-DD[T]hh:mm:ss+hh:mm e.g. 2015-01-01T12:00:00+08:00 for UTC +8 Mandatory if working_load_test_result = 2, 3 or 4

Ultimate Load Test (ULT) [New]

Data Element Name (Data Field)	Definition	Mandatory/ Optional	Data Field Type	Data Validation Rule - Format
Project Reference Number	Project Reference Number (e.g. A1234-12345-2022)	Mandatory	string	Field length = 16 1st character: Alphabet is either A or E 2nd-5th character: Number 6th character: Hyphen 7th-11th character: Alphanumeric 12th character: Hyphen 13th-16th character: Number
Project Title	Project Title (e.g. Proposed Construction of 50 Story Mixed Commercial & Residential Building)	Mandatory	string	Field length = Maximum 1000
Project Location Description	Project Location Description (e.g. 52 Jurong Gateway Road Singapore 608549, MK01 LOT 00001A, Interchange between Jalan Bahar and Pioneer Road)	Mandatory	string	Field length = Maximum 2000
Project Main Contractor Company Name	Project main contractor company name as in ACRA	Mandatory	string	
Project Main Contractor Company Unique Entity Number	Project main contractor company Unique Entity Number (UEN) as in ACRA	Mandatory	string	Field length = 9-10 Businesses registered with ACRA(1) : NNNNNNNNX Local companies registered with ACRA(1) : YYYYNNNNNX All other entities which will be issued new UEN : TYYPQNNNNX where 'N' = A number 'P' = An alphabetical letter 'Q' = An alpha-numeric digit 'PQ' = Entity Type(2)

				'TYY' / 'SYY' / 'YYYY' = Year of issuance(3) 'X' = A check alphabet For example, the UEN for a limited liability partnership (LLP) formed on 1 January 2009 could be 'T09LL0001B' (1) No change from existing ACRA Registration Number (2) E.g. 'LL' = 'Limited Liability Partnership' (3) 'T' represents 20, 'S' represents '19' and 'R' represents '18'. E.g. T08 means year 2008, S99 means year 1999 and R00 means year 1800.
Technical Controller Person Name	Technical controller name as in Unique Identification Number (UIN), i.e. National Registration Identity Card (NRIC) or Foreign Identification Number (FIN)	Mandatory	string	Field length = Maximum 66
Registered Engineer Registered Technical Officer Person Name	Registered Engineer / Registered Technical Officer (RE/RTO) name as in Unique Identification Number (UIN), i.e. National Registration Identity Card (NRIC) or Foreign Identification Number (FIN)	Mandatory	string	Field length = Maximum 66
Registered Engineer Registered Technical Officer Registration Number	Registered Engineer / Registered Technical Officer (RE/RTO) registration number as registered with Institute of Engineers Singapore (IES) (e.g. RE-1234, RTO-1234)	Mandatory	string	Field length = 7-8 Field value = Alphanumeric, including special character i.e. hyphen
Qualified Person Supervision Person Name	Qualified person (supervision) name as in Unique Identification Number (UIN), i.e. National Registration Identity Card (NRIC) or Foreign Identification Number (FIN)	Mandatory	string	Field length = Maximum 66

Qualified Person Supervision Registration Number	Qualified person (supervision) registration number as registered with Professional Engineers Board (PEB) (e.g. 0123)	Mandatory	string	Field length = 4 Field value = Numeric, may have led zero
Qualified Person Geotechnical Person Name	Qualified personnel (geotechnical) name as in Unique Identification Number (UIN), i.e. National Registration Identity Card (NRIC) or Foreign Identification Number (FIN) (i.e. required for building 30 storey or higher)	Optional	string	Field length = Maximum 66
Qualified Person Geotechnical Registration Number	Qualified personnel (geotechnical) registration number as registered with Professional Engineers Board (PEB) (i.e. required for building 30 storey or higher) (e.g. 0123)	Optional	string	Field length = 4 Field value = Numeric, may have leading zero
Project Total Ultimate Load Test	Total number of Ultimate Load Test (ULT) performed for project (i.e. to update number if there is/are additional ULT performed, arising from earlier ULT that QP was not satisfied)	Mandatory	integer	
Structural Plan Number	Structure plan number	Mandatory	string	
Pile Reference Number	Pile reference number as per approved piling plan	Mandatory	string	
Ultimate Load Test Date	Date when Ultimate Load Test (ULT) is performed (i.e. best practice for ULT to be sent as and when, upon completion)	Mandatory	datetime	Field length = 25 YYYY-MM-DD[T]hh:mm:ss+hh:mm e.g. 2015-01-01T12:00:00+08:00 for UTC +8
Ultimate Load Test Method	Method adopted for Ultimate Load Test (ULT) [Selection: 1 - Reaction Test Pile (e.g. Kentledge, Ground Anchor, Tension Pile etc);	Mandatory	integer	Field length = 1 Minimum value = 1 Maximum value = 4

	2 - Bi-directional Load Test; 3 - Rapid Load Test; 4 - Other ULT Method]			
Ultimate Load Test Method Other	Description of other Ultimate Load Test (ULT) method (i.e. to populate if "Other ULT Method" is selected for Ultimate Load Test Method)	Optional	string	Mandatory if ultimate_load_test_method = 4
Pile Diameter	Diameter or length of longest side of pile in millimetres	Mandatory	integer	
Pile As Built Length	As-built length of a pile as measured on site from the cut-off level in metres	Mandatory	double	up to 3 d.p
Pile Working Load	Design working load of tested pile, in kilonewton	Mandatory	integer	
Pile Head Settlement 1.5 Time Working Load	Measured pile settlement at 1.5 time working load, in millimetres	Mandatory	double	up to 3 d.p
Pile Head Settlement 2.0 Time Working Load	Measured pile settlement at 2.0 time working load, in millimetres	Mandatory	double	up to 3 d.p
Maximum X Time Working Load Before Failure	Maximum time of working load the pile is loaded to before failure (e.g X times of working load)	Mandatory	double	up to 3 d.p
Pile Head Settlement X Time Working Load	Measured pile settlement at X time of working load, in millimetres	Mandatory	double	up to 3 d.p
Ultimate Load Test Result	Result of Ultimate Load Test (ULT) [Selection: 1 - Proceed with Working Pile (QP Satisfied with ULT, Confirmed Design Parameter and Optimisation Not Required); 2 - Proceed with Working Pile Pending Amendment Plan (QP Satisfied with	Mandatory	integer	Field length = 1 Minimum value = 1 Maximum value = 4

	ULT, Confirmed Design Parameter and Optimisation Required); 3 - Do Not Proceed with Working Pile Pending Amendment Plan (QP Satisfied with ULT and Did Not Confirm Design Parameter); 4 - Redo ULT (QP Not Satisfied)]			
Redone Ultimate Load Test	Indicate if the Ultimate Load Test (ULT) is the redone required due to an earlier ULT that QP was not satisfied [Selection: True - Yes; False - No]	Mandatory	boolean	
Ultimate Load Test Amendment Remarks	Amendment remarks for Ultimate Load Test (ULT) that requires amendment (i.e. to populate if "Pending Amendment" and "Redo ULT" is selected for Ultimate Load Test Result)	Optional	string	Mandatory if ultimate_load_test_result = 2, 3 or 4
Ultimate Load Test Amendment Date	Date that Ultimate Load Test (ULT) amendment is performed (i.e. to populate if "Pending Amendment" and "Redo ULT" is selected for Ultimate Load Test Result)	Optional	datetime	Field length = 25 YYYY-MM-DD[T]hh:mm:ss+hh:mm e.g. 2015-01-01T12:00:00+08:00 for UTC +8 Mandatory if ultimate_load_test_result = 2, 3 or 4

Concrete Cube Test (Laboratory) [New]

Note: Concrete Cube Test (Laboratory) data is generated by the test laboratory. Data field highlighted in yellow should be provided by the builder and QP.

Data Element Name (Data Field)	Definition	Mandatory/ Optional	Data Field Type	Data Validation Rule - Format
Project Reference Number	Project Reference Number (e.g. A1234-12345-2022)	Optional	string	Field length = 16 1st character: Alphabet is either A or E 2nd-5th character: Number 6th character: Hyphen 7th-11th character: Alphanumeric 12th character : Hyphen 13th-16th character: Number Mandatory if project_test_laboratory_contract_number is not provided
Project Title	Project Title (e.g. Proposed Construction of 50 Sty Mixed Commercial & Residential Building)	Optional	string	Field length = Maximum 1000
Project Location Description	Project Location Description (e.g. 52 Jurong Gateway Road Singapore 608549, MK01 LOT 00001A, Interchange between Jalan Bahar and Pioneer Road)	Optional	string	Field length = Maximum 2000
Project Main Contractor Company Name	Project main contractor company name as in ACRA	Mandatory	string	
Project Main Contractor Company Unique Entity Number	Project main contractor company Unique Entity Number (UEN) as in ACRA	Mandatory	string	Field length = 9-10 Businesses registered with ACRA(1) : NNNNNNNNX Local companies registered with ACRA(1) : YYYYNNNNNX All other entities which will be issued new UEN :

				TYYPQNNNNX where 'N' = A number 'P' = An alphabetical letter 'Q' = An alpha-numeric digit 'PQ' = Entity Type(2) 'TYY' / 'SYY' / 'YYYY' = Year of issuance(3) 'X' = A check alphabet For example, the UEN for a limited liability partnership (LLP) formed on 1 January 2009 could be 'T09LL0001B' (1) No change from existing ACRA Registration Number (2) E.g. 'LL' = 'Limited Liability Partnership' (3) 'T' represents 20, 'S' represents '19' and 'R' represents '18'. E.g. T08 means year 2008, S99 means year 1999 and R00 means year 1800.
Project Test Laboratory Company Name	Project test laboratory company name as registered in Singapore Accreditation Council (SAC)	Mandatory	string	
Project Test Laboratory Company Unique Entity Number	Project test laboratory company Unique Entity Number (UEN) as in Singapore Accreditation Council (SAC)	Mandatory	string	Field length = 9-10 Businesses registered with ACRA(1) : NNNNNNNNX Local companies registered with ACRA(1) : YYYYNNNNNX All other entities which will be issued new UEN : TYYPQNNNNX where 'N' = A number 'P' = An alphabetical letter 'Q' = An alpha-numeric digit 'PQ' = Entity Type(2) 'TYY' / 'SYY' / 'YYYY' = Year of issuance(3) 'X' = A check alphabet

				For example, the UEN for a limited liability partnership (LLP) formed on 1 January 2009 could be 'T09LL0001B' (1) No change from existing ACRA Registration Number (2) E.g. 'LL' = 'Limited Liability Partnership' (3) 'T' represents 20, 'S' represents '19' and 'R' represents '18'. E.g. T08 means year 2008, S99 means year 1999 and R00 means year 1800.
Project Test Laboratory Contract Number	Project test laboratory contract number with main contractor	Optional	string	Mandatory if project_reference_number is not provided
Project Concrete Supplier Company Name	Project concrete supplier company name as per its business registration (i.e. local or overseas company, local company as per ACRA)	Optional	string	
Project Concrete Supplier Company Registration Number	Project concrete supplier company business registration number (i.e. local or overseas company, local company to use UEN)	Optional	string	
Registered Engineer Registered Technical Officer Person Name	Registered Engineer / Registered Technical Officer (RE/RTO) name as in Unique Identification Number (UIN), i.e. National Registration Identity Card (NRIC) or Foreign Identification Number (FIN)	Optional	string	Field length = Maximum 66
Registered Engineer Registered Technical Officer Registration Number	Registered Engineer / Registered Technical Officer (RE/RTO) registration number as registered with Institute of Engineers Singapore (IES) (e.g. RE-1234, RTO-1234)	Optional	string	Field length = 7-8 Field value = Alphanumeric, including special character i.e. hyphen
Casting Location	Location of casting element structure (e.g. identification of location may	Mandatory	string	

	include block number, floor number) (i.e. populate "NA" if casting location is not available)			
Casting Date	Date of casting element structure	Mandatory	datetime	Field length = 25 YYYY-MM-DD[T]hh:mm:ss+hh:mm e.g. 2015-01-01T12:00:00+08:00 for UTC +8
Concrete Slump	Concrete slump height in millimetre	Optional	integer	
Concrete Grade	Grade of concrete as per EN1992-1-1 Euro Code 2 standards (e.g. C40/50)	Mandatory	string	
Concrete Type	Type of concrete [Selection: 1 - Normal; 2 - Green Concrete; 3 - Lightweight Concrete; 4 - Other]	Optional	integer	Field length = 1 Minimum value = 1 Maximum value = 4
Concrete Type Additional Information	Additional information for concrete type that is not normal (i.e. to populate if "Green Concrete", "Lightweight Concrete" or "Other" is selected for Concrete Type, elaborate on design mix, special aggregates/admixtures used etc for "Green Concrete" or "Lightweight Concrete", elaborate on concrete specialty for "Other")	Optional	string	Mandatory if concrete_type = 2,3,4
Concrete Work Type	Work type of concrete that Concrete Cube Test (CCT) is performed on [Selection: 1 - Civil Concrete; 2 - Piling Concrete; 3 - Structural Concrete Beam; 4 - Structural Concrete Column; 5 - Structural Concrete Slab; 6 - Structural Concrete Wall;	Optional	integer	Field length = maximum 2 Minimum value = 1 Maximum value = 10

	7 - Structural Concrete Pilecap; 8 - Structural Concrete Other or Unknown; 9 - Structural Grout; 10 - Piling Grout]			
Concrete Mix Type	Mix type of concrete that Concrete Cube Test (CCT) is performed on (i.e. not applicable/need not populate if "Structural Grout" or "Piling Grout" is selected for Concrete Work Type) [Selection: 1 - Normal Mix (20mm aggregated); 2 - Pump Mix (20mm aggregated); 3 - Normal Mix (9mm aggregated); 4 - Pump Mix (9mm aggregated) 5 - Self Compacting (SCC); 6 - PBFC Concrete; 7 - Loading Bearing; 8 - Non Load Bearing; 9 - Concrete with GGBS; 10 - Other]	Optional	integer	Field length = maximum 2 Minimum value = 1 Maximum value = 10
Concrete Cube Test Job Reference Number	Job reference number for the Concrete Cube Test (CCT) performed, also known as test report number	Mandatory	string	
Concrete Cube Test Type Required	Type of Concrete Cube Test (CCT) required (e.g. 7th Day, 28th Day or Additional CCT) [Selection: 1 - 7th Day CCT; 2 - 28th Day CCT: 3 - 56th Day CCT; 4 - Additional CCT (repeated test for earlier failed test); 5 - Other Type CCT]	Mandatory	integer	Field length = 1 Minimum value = 1 Maximum value = 5

Concrete Cube Test Type Other	The age of Concrete Cube Test (CCT) (i.e. to populate if "Other Type CCT" is selected for Concrete Cube Test Type Required) (e.g. populate "3" for 3rd Day CCT, "10" for 10th Day CCT, "90" for 90th Day CCT)	Optional	integer	Mandatory if concrete_cube_test_type_required = 5
Concrete Cube Size and Test Standard	Size of concrete cube and test standard applied for performing Concrete Cube Test (CCT) [Selection: 1 - 50x50mm: ASTM C109 /109M - 21 2 - 100x100mm BS EN 12390 Pt 3 : 2019 3 - 150mmx150mm BS EN 12390 Pt 3 : 2019]	Optional	integer	Field length = 1 Minimum value = 1 Maximum value = 3
Concrete Cube Test Date	Date of performing Concrete Cube Test (CCT)	Mandatory	datetime	Field length = 25 YYYY-MM-DD[T]hh:mm:ss+hh:mm e.g. 2015-01-01T12:00:00+08:00 for UTC +8
Concrete Cube Test Sample Average Cube Strength	Sample average cube strength of samples/specimen tested in megapascal	Mandatory	double	up to 1 d.p
Concrete Cube Test Rolling Average Cube Strength	Rolling average cube strength of samples/specimen tested in megapascal	Optional	double	up to 1 d.p
Concrete Cube Test Result	Result of Concrete Cube Test (CCT) [Selection: True - Passed; False - Failed]	Optional	boolean	
Concrete Cube Test Rectification Remarks	Rectification remarks for failed Concrete Cube Test (CCT) (i.e. to populate if "Failed" is selected for Concrete Cube Test Result)	Optional	string	Mandatory if concrete_cube_test_result = FALSE
Concrete Cube Test Rectification Date	Date that Concrete Cube Test (CCT) rectification is performed (i.e. to	Optional	datetime	Field length = 25

	populate if 'Failed" is selected for Concrete Cube Test Result)			YYYY-MM-DD[T]hh:mm:ss+hh:mm e.g. 2015-01-01T12:00:00+08:00 for UTC +8 Mandatory if concrete_cube_test_result = FALSE
Concrete Cube Test Sample Number	Sample number for the Concrete Cube Test (CCT) performed	Optional	string	
Concrete Cube Test Attachments	Concrete Cube Test (CCT) attachments	Optional	object	
Attachments	Attachments of Concrete Cube Test (CCT) (i.e. 10MB maximum file size per file)	Optional	array	maximum 1 file attachment of maximum 10MB file size
Filename	Filename of Concrete Cube Test (CCT) attachment (i.e. filename with extension)	Optional	string	Allowed file extensions are ".pdf", ".doc", ".docx", "xls", ".xlsx", ".jpg", ".jpeg", ".png", ".heic", ".gif", ".bmp", ".tiff", ".ppt", ".pptx"
File Content	File content of Concrete Cube Test (CCT) attachment (i.e. content stored in an encoded string format)	Optional	string	
Concrete Cube Test Details	Details of Concrete Cube Test (CCT) performed on each cube sample	Mandatory	array	
Cube Reference Number	Cube reference number, also known as sample identification number or client reference number	Mandatory	string	
Cube Mass	Mass of cube sample in kilogram	Optional	double	up to 3 d.p
Cube Density	Density of cube sample in kilogram per cubic metre	Optional	integer	
Cube Fracture Type	Type of fracture of cube sample [Selection: True - Satisfactory; False - Non-Satisfactory]	Optional	boolean	
Cube Strength	Cube strength of cube sample in megapascal	Mandatory	double	up to 1 d.p

Concrete Cube Test (Contractor) [New]

Note: The contractor should obtain laboratory concrete cube test data and add the contractor-specific data fields (highlighted in yellow) to generate the complete concrete cube test (contractor) dataset.

Data Element Name (Data Field)	Definition	Mandatory/ Optional	Data Field Type	Data Validation Rule - Format
Project Reference Number	Project Reference Number (e.g. A1234-12345-2022)	Mandatory	string	Field length = 16 1st character: Alphabet is either A or E 2nd-5th character: Number 6th character: Hyphen 7th-11th character: Alphanumeric 12th character : Hyphen 13th-16th character: Number
Project Title	Project Title (e.g. Proposed Construction of 50 Sty Mixed Commercial & Residential Building)	Mandatory	string	Field length = Maximum 1000
Project Location Description	Project Location Description (e.g. 52 Jurong Gateway Road Singapore 608549, MK01 LOT 00001A, Interchange between Jalan Bahar and Pioneer Road)	Mandatory	string	Field length = Maximum 2000
Project Main Contractor Company Name	Project main contractor company name as in ACRA	Mandatory	string	
Project Main Contractor Company Unique Entity Number	Project main contractor company Unique Entity Number (UEN) as in ACRA	Mandatory	string	Field length = 9-10 Businesses registered with ACRA(1) : NNNNNNNNX Local companies registered with ACRA(1) : YYYYNNNNNX All other entities which will be issued new UEN : TYYPQNNNNX where 'N' = A number

				'P' = An alphabetical letter 'Q' = An alpha-numeric digit 'PQ' = Entity Type(2) 'TYY' / 'SYY' / 'YYYY' = Year of issuance(3) 'X' = A check alphabet For example, the UEN for a limited liability partnership (LLP) formed on 1 January 2009 could be 'T09LL0001B' (1) No change from existing ACRA Registration Number (2) E.g. 'LL' = 'Limited Liability Partnership' (3) 'T' represents 20, 'S' represents '19' and 'R' represents '18'. E.g. T08 means year 2008, S99 means year 1999 and R00 means year 1800.
Project Test Laboratory Company Name	Project test laboratory company name as registered in Singapore Accreditation Council (SAC)	Mandatory	string	
Project Test Laboratory Company Unique Entity Number	Project test laboratory company Unique Entity Number (UEN) as in Singapore Accreditation Council (SAC)	Mandatory	string	Field length = 9-10 Businesses registered with ACRA(1) : NNNNNNNNX Local companies registered with ACRA(1) : YYYYNNNNNX All other entities which will be issued new UEN : TYYPQNNNNX where 'N' = A number 'P' = An alphabetical letter 'Q' = An alpha-numeric digit 'PQ' = Entity Type(2) 'TYY' / 'SYY' / 'YYYY' = Year of issuance(3) 'X' = A check alphabet For example, the UEN for a limited liability partnership (LLP) formed on 1 January 2009 could be 'T09LL0001B'

				(1) No change from existing ACRA Registration Number (2) E.g. 'LL' = 'Limited Liability Partnership' (3) 'T' represents 20, 'S' represents '19' and 'R' represents '18'. E.g. T08 means year 2008, S99 means year 1999 and R00 means year 1800.
Project Test Laboratory Contract Number	Project test laboratory contract number with main contractor	Optional	string	
Project Concrete Supplier Company Name	Project concrete supplier company name as per its business registration (i.e. local or overseas company, local company as per ACRA) (i.e. to populate if "Civil Concrete", "Piling Concrete", "Structural Concrete Beam", "Structural Concrete Column", "Structural Concrete Slab", "Structural Concrete Wall", "Structural Concrete Pilecap" or "Structural Concrete Other or Unknown" is selected for Concrete Work Type)	Optional	string	Mandatory if concrete_work_type = 1 to 8
Project Concrete Supplier Company Registration Number	Project concrete supplier company business registration number (i.e. local or overseas company, local company to use UEN) (i.e. to populate if "Civil Concrete", "Piling Concrete", "Structural Concrete Beam", "Structural Concrete Column", "Structural Concrete Slab", "Structural Concrete Wall", "Structural Concrete Pilecap" or "Structural Concrete Other or Unknown" is selected for Concrete Work Type)	Optional	string	Mandatory if concrete_work_type = 1 to 8

Registered Engineer Registered Technical Officer Person Name	Registered Engineer / Registered Technical Officer (RE/RTO) name as in Unique Identification Number (UIN), i.e. National Registration Identity Card (NRIC) or Foreign Identification Number (FIN)	Mandatory	string	Field length = Maximum 66
Registered Engineer Registered Technical Officer Registration Number	Registered Engineer / Registered Technical Officer (RE/RTO) registration number as registered with Institute of Engineers Singapore (IES) (e.g. RE-1234, RTO-1234)	Mandatory	string	Field length = 7-8 Field value = Alphanumeric, including special character i.e. hyphen
Casting Location	Location of casting element structure (e.g. identification of location may include block number, floor number) (i.e. populate "NA" if casting location is not available)	Mandatory	string	
Casting Date	Date of casting element structure	Mandatory	datetime	Field length = 25 YYYY-MM-DD[T]hh:mm:ss+hh:mm e.g. 2015-01-01T12:00:00+08:00 for UTC +8
Concrete Slump	Concrete slump height in millimetre	Optional	integer	
Concrete Grade	Grade of concrete as per EN1992-1-1 Euro Code 2 standards (e.g. C40/50)	Mandatory	string	
Concrete Type	Type of concrete [Selection: 1 - Normal; 2 - Green Concrete; 3 - Lightweight Concrete; 4 - Other]	Mandatory	integer	Field length = 1 Minimum value = 1 Maximum value = 4
Concrete Type Additional Information	Additional information for concrete type that is not normal (i.e. to populate if "Green Concrete", "Lightweight Concrete" or "Other" is selected for	Optional	string	Mandatory if concrete_type = 2,3,4

	Concrete Type, elaborate on design mix, special aggregates/admixtures used etc for "Green Concrete" or "Lightweight Concrete", elaborate on concrete specialty for "Other")			
Concrete Work Type	Work type of concrete that Concrete Cube Test (CCT) is performed on [Selection: 1 - Civil Concrete; 2 - Piling Concrete; 3 - Structural Concrete Beam; 4 - Structural Concrete Column; 5 - Structural Concrete Slab; 6 - Structural Concrete Wall; 7 - Structural Concrete Pilecap; 8 - Structural Concrete Other or Unknown; 9 - Structural Grout; 10 - Piling Grout]	Mandatory	integer	Field length = maximum 2 Minimum value = 1 Maximum value = 10
Concrete Mix Type	Mix type of concrete that Concrete Cube Test (CCT) is performed on (i.e. not applicable/need not populate if "Structural Grout" or "Piling Grout" is selected for Concrete Work Type) [Selection: 1 - Normal Mix (20mm aggregated); 2 - Pump Mix (20mm aggregated); 3 - Normal Mix (9mm aggregated); 4 - Pump Mix (9mm aggregated) 5 - Self Compacting (SCC); 6 - PBFC Concrete; 7 - Loading Bearing; 8 - Non Load Bearing;	Optional	integer	Field length = maximum 2 Minimum value = 1 Maximum value = 10

	9 - Concrete with GGBS; 10 - Other]			
Concrete Cube Test Job Reference Number	Job reference number for the Concrete Cube Test (CCT) performed, also known as test report number	Mandatory	string	
Concrete Cube Test Type Required	Type of Concrete Cube Test (CCT) required (e.g. 7th Day, 28th Day or Additional CCT) [Selection: 1 - 7th Day CCT; 2 - 28th Day CCT: 3 - 56th Day CCT; 4 - Additional CCT (repeated test for earlier failed test); 5 - Other Type CCT]	Mandatory	integer	Field length = 1 Minimum value = 1 Maximum value = 5
Concrete Cube Test Type Other	The age of Concrete Cube Test (CCT) (i.e. to populate if "Other Type CCT" is selected for Concrete Cube Test Type Required) (e.g. populate "3" for 3rd Day CCT, "10" for 10th Day CCT, "90" for 90th Day CCT)	Optional	integer	Mandatory if concrete_cube_test_type_required = 5
Concrete Cube Size and Test Standard	Size of concrete cube and test standard applied for performing Concrete Cube Test (CCT) [Selection: 1 - 50x50mm: ASTM C109 /109M - 21 2 - 100x100mm BS EN 12390 Pt 3 : 2019 3 - 150mmx150mm BS EN 12390 Pt 3 : 2019]	Optional	integer	Field length = 1 Minimum value = 1 Maximum value = 3
Concrete Cube Test Date	Date of performing Concrete Cube Test (CCT)	Mandatory	datetime	Field length = 25 YYYY-MM-DD[T]hh:mm:ss+hh:mm e.g. 2015-01-01T12:00:00+08:00 for UTC +8

Concrete Cube Test Sample Average Cube Strength	Sample average cube strength of samples/specimen tested in megapascal	Mandatory	double	up to 1 d.p
Concrete Cube Test Rolling Average Cube Strength	Rolling average cube strength of samples/specimen tested in megapascal	Optional	double	up to 1 d.p
Concrete Cube Test Result	Result of Concrete Cube Test (CCT) [Selection: True - Passed; False - Failed]	Mandatory	boolean	
Concrete Cube Test Rectification Remarks	Rectification remarks for failed Concrete Cube Test (CCT) (i.e. to populate if "Failed" is selected for Concrete Cube Test Result)	Optional	string	Mandatory if concrete_cube_test_result = FALSE
Concrete Cube Test Rectification Date	Date that Concrete Cube Test (CCT) rectification is performed (i.e. to populate if 'Failed" is selected for Concrete Cube Test Result)	Optional	datetime	Field length = 25 YYYY-MM-DD[T]hh:mm:ss+hh:mm e.g. 2015-01-01T12:00:00+08:00 for UTC +8 Mandatory if concrete_cube_test_result = FALSE
Concrete Cube Test Sample Number	Sample number for the Concrete Cube Test (CCT) performed	Optional	string	
Concrete Cube Test Attachments	Concrete Cube Test (CCT) attachments	Optional	object	
Attachments	Attachments of Concrete Cube Test (CCT) (i.e. 10MB maximum file size per file)	Optional	array	maximum 1 file attachment of maximum 10MB file size
Filename	Filename of Concrete Cube Test (CCT) attachment (i.e. filename with extension)	Optional	string	Allowed file extensions are ".pdf", ".doc", ".docx", "xls", ".xlsx", ".jpg", ".jpeg", ".png", ".heic", ".gif", ".bmp", ".tiff", ".ppt", ".pptx"
File Content	File content of Concrete Cube Test (CCT) attachment (i.e. content stored in an encoded string format)	Optional	string	

Concrete Cube Test Details	Details of Concrete Cube Test (CCT) performed on each cube sample	Mandatory	array	
Cube Reference Number	Cube reference number, also known as sample identification number or client reference number	Mandatory	string	
Cube Mass	Mass of cube sample in kilogram	Optional	double	up to 3 d.p
Cube Density	Density of cube sample in kilogram per cubic metre	Optional	integer	
Cube Fracture Type	Type of fracture of cube sample [Selection: True - Satisfactory; False - Non-Satisfactory]	Optional	boolean	
Cube Strength	Cube strength of cube sample in megapascal	Mandatory	double	up to 1 d.p

Steel Element Test [New]

Data Element Name (Data Field)	Definition	Mandatory/ Optional	Data Field Type	Data Validation Rule - Format
Project Reference Number	Project Reference Number (e.g. A1234-12345-2022)	Mandatory	string	Field length = 16 1st character: Alphabet is either A or E 2nd-5th character: Number 6th character: Hyphen 7th-11th character: Alphanumeric 12th character : Hyphen 13th-16th character: Number
Project Title	Project Title (e.g. Proposed Construction of 50 Sty Mixed Commercial & Residential Building)	Mandatory	string	Field length = Maximum 1000
Project Location Description	Project Location Description (e.g. 52 Jurong Gateway Road Singapore 608549, MK01 LOT 00001A, Interchange between Jalan Bahar and Pioneer Road)	Mandatory	string	Field length = Maximum 2000
Project Main Contractor Company Name	Project main contractor company name as in ACRA	Mandatory	string	
Project Main Contractor Company Unique Entity Number	Project main contractor company Unique Entity Number (UEN) as in ACRA	Mandatory	string	Field length = 9-10 Businesses registered with ACRA(1) : NNNNNNNNX Local companies registered with ACRA(1) : YYYYNNNNNX All other entities which will be issued new UEN : TYYPQNNNNX where 'N' = A number 'P' = An alphabetical letter 'Q' = An alpha-numeric digit 'PQ' = Entity Type(2)

				'TYY' / 'SYY' / 'YYYY' = Year of issuance(3) 'X' = A check alphabet For example, the UEN for a limited liability partnership (LLP) formed on 1 January 2009 could be 'T09LL0001B' (1) No change from existing ACRA Registration Number (2) E.g. 'LL' = 'Limited Liability Partnership' (3) 'T' represents 20, 'S' represents '19' and 'R' represents '18'. E.g. T08 means year 2008, S99 means year 1999 and R00 means year 1800.
Project Test Laboratory Company Name	Project test laboratory company name as registered in Singapore Accreditation Council (SAC) or registered with foreign accreditation body that has Mutual Recognition Arrangement (MRA) with SAC.	Mandatory	string	
Project Test Laboratory Company Unique Entity Number	Project test laboratory company Unique Entity Number (UEN) as registered in Singapore Accreditation Council (SAC) or foreign business registration number	Optional	string	
Project Steel Mill Company Name	Project steel mill company name	Mandatory	string	
Project Steel Mill Company Country Manufacture	Country that the project steel mill company manufacture the steel (e.g. CN, IN, JP)	Mandatory	string	Field length = 2 Field value = Alphabet
Project Steel Fabricator Company Name	Project steel fabricator company name	Mandatory	string	
Project Steel Fabricator Company Country Fabrication	Country that the project steel fabrication company fabricate the steel (e.g. CN, IN, JP)	Mandatory	string	Field length = 2 Field value = Alphabet

Project Inspection Testing Agency Company Name	Project Inspection and Testing Agency (ITA, appointed to supervise the fabrication process) company name as registered in Singapore Accreditation Council (SAC) or registered with foreign accreditation body that has Mutual Recognition Arrangement (MRA) with SAC.	Optional	string	
Project Inspection Testing Agency Company Unique Entity Number	Project Inspection and Testing Agency (ITA, appointed to supervise the fabrication process) company Unique Entity Number (UEN) as registered in Singapore Accreditation Council (SAC) or foreign business registration number.	Optional	string	
Steel Fabricator Accreditation Builders Licensing Scheme	Steel fabricator accreditation and licensed as a specialist builder under BCA's Builders Licensing Scheme (BLS) [Selection: True - Yes; False - No;]	Mandatory	boolean	
Test Laboratory Accreditation Singapore Accreditation Council	Test laboratory accreditation with Singapore Accreditation Council - Singapore Laboratory Accreditation Scheme (SAC-SINGLAS) [Selection: True - Yes; False - No, accredited by foreign accreditation body that has Mutual Recognition Arrangement (MRA) with SAC	Mandatory	boolean	
Registered Engineer Registered	Registered Engineer / Registered Technical Officer (RE/RTO) name as in Unique Identification Number (UIN), i.e. National Registration Identity Card	Mandatory	string	Field length = Maximum 66

Technical Officer Person Name	(NRIC) or Foreign Identification Number (FIN)			
Registered Engineer Registered Technical Officer Registration Number	Registered Engineer / Registered Technical Officer (RE/RTO) registration number as registered with Institute of Engineers Singapore (IES) (e.g. RE-1234, RTO-1234)	Mandatory	string	Field length = 7-8 Field value = Alphanumeric, including special character i.e. hyphen
Steel Grade	Grade of steel	Mandatory	string	
Steel Design Strength	Design steel strength in megapascal	Mandatory	double	up to 1 d.p
Bolt Specification	Specification of bolts to be used	Optional	string	
Steel Element Test Report Number	Report Number of Steel Element Test (SET)	Mandatory	string	
Steel Element Test Date	Date of performing Steel Element Test (SET)	Mandatory	datetime	Field length = 25 YYYY-MM-DD[T]hh:mm:ss+hh:mm e.g. 2015-01-01T12:00:00+08:00 for UTC +8
Steel Element Test Result	Result of Steel Element Test (SET) [Selection: True - Passed; False - Failed]	Mandatory	boolean	
Steel Element Test Standard	Test standard applied for performing Steel Element Test (SET)	Mandatory	string	
Steel Element Test Remarks	Remarks for failed Steel Element Test (SET) (i.e. to populate if "Failed" is selected for Steel Element Test Result)	Optional	string	Mandatory if steel_element_test_result = False
Steel Element Test Attachments	Supporting document attachments to Steel Element Test (SET)	Mandatory	object	
Attachments	Attachments of Steel Element Test (SET) (i.e. 10MB maximum file size per file)	Mandatory	array	maximum 1 file attachment

Filename	Filename of Steel Element Test (SET) attachment (i.e. filename with extension)	Mandatory	string	Allowed file extensions are ".pdf", ".doc", ".docx", "xls", ".xlsx", ".jpg", ".jpeg", ".png", ".heic", ".gif", ".bmp", ".tiff", ".ppt", ".pptx"
File Content	File content of Steel Element Test (SET) attachment (i.e. content stored in an encoded string format)	Mandatory	string	
Steel Element Test Details	Details of test performed on each steel element sample	Mandatory	array	
Sample Number	Sample number of steel element sample	Mandatory	string	
Yield Strength	Yield strength of steel element sample in megapascal	Mandatory	double	up to 1 d.p
Tensile Strength	Tensile strength of steel element sample in megapascal	Mandatory	double	up to 1 d.p
Elongation	Elongation of steel element sample in percentage	Mandatory	double	up to 1 d.p Minimum value = 0 Maximum value = 100

Steel Rebar Test [New]

Data Element Name (Data Field)	Definition	Mandatory/ Optional	Data Field Type	Data Validation Rule - Format
Project Reference Number	Project Reference Number (e.g. A1234-12345-2022)	Mandatory	string	Field length = 16 1st character: Alphabet is either A or E 2nd-5th character: Number 6th character: Hyphen 7th-11th character: Alphanumeric 12th character : Hyphen 13th-16th character: Number
Project Title	Project Title (e.g. Proposed Construction of 50 Sty Mixed Commercial & Residential Building)	Mandatory	string	Field length = Maximum 1000
Project Location Description	Project Location Description (e.g. 52 Jurong Gateway Road Singapore 608549, MK01 LOT 00001A, Interchange between Jalan Bahar and Pioneer Road)	Mandatory	string	Field length = Maximum 2000
Project Main Contractor Company Name	Project main contractor company name as in ACRA	Mandatory	string	
Project Main Contractor Company Unique Entity Number	Project main contractor company Unique Entity Number (UEN) as in ACRA	Mandatory	string	Field length = 9-10 Businesses registered with ACRA(1) : NNNNNNNNX Local companies registered with ACRA(1) : YYYYNNNNNX All other entities which will be issued new UEN : TYYPQNNNNX where 'N' = A number 'P' = An alphabetical letter 'Q' = An alpha-numeric digit 'PQ' = Entity Type(2)

				'TYY' / 'SYY' / 'YYYY' = Year of issuance(3) 'X' = A check alphabet For example, the UEN for a limited liability partnership (LLP) formed on 1 January 2009 could be 'T09LL0001B' (1) No change from existing ACRA Registration Number (2) E.g. 'LL' = 'Limited Liability Partnership' (3) 'T' represents 20, 'S' represents '19' and 'R' represents '18'. E.g. T08 means year 2008, S99 means year 1999 and R00 means year 1800.
Project Test Laboratory Company Name	Project test laboratory company name as registered in Singapore Accreditation Council (SAC) or registered with foreign accreditation body that has Mutual Recognition Arrangement (MRA) with SAC.	Mandatory	string	
Project Test Laboratory Company Unique Entity Number	Project test laboratory company Unique Entity Number (UEN) as registered in Singapore Accreditation Council (SAC) or foreign business registration number	Optional	string	
Project Steel Mill Company Name	Project steel mill company name	Optional	string	
Project Steel Mill Company Country Manufacture	Country that the project steel mill company manufacture the steel (e.g. CN, IN, JP)	Optional	string	Field length = 2 Field value = Alphabet
Project Steel Fabricator Company Name	Project steel fabricator company name	Mandatory	string	
Project Steel Fabricator Company Country Fabrication	Country that the project steel fabrication company fabricate the steel (e.g. CN, IN, JP)	Mandatory	string	Field length = 2 Field value = Alphabet

Test Laboratory Accreditation Singapore Accreditation Council	Test laboratory accreditation with Singapore Accreditation Council - Singapore Laboratory Accreditation Scheme (SAC-SINGLAS) [Selection: True - Yes; False - No, accredited by foreign accreditation body that has Mutual Recognition Arrangement (MRA) with SAC]	Mandatory	boolean	
Registered Engineer Registered Technical Officer Person Name	Registered Engineer / Registered Technical Officer (RE/RTO) name as in Unique Identification Number (UIN), i.e. National Registration Identity Card (NRIC) or Foreign Identification Number (FIN)	Mandatory	string	Field length = Maximum 66
Registered Engineer Registered Technical Officer Registration Number	Registered Engineer / Registered Technical Officer (RE/RTO) registration number as registered with Institute of Engineers Singapore (IES) (e.g. RE-1234, RTO-1234)	Mandatory	string	Field length = 7-8 Field value = Alphanumeric, including special character i.e. hyphen
Steel Grade	Grade of steel	Mandatory	string	
Steel Design Strength Minimum	Lower limit (range) of design tensile test's yield strength in megapascal	Mandatory	double	up to 1 d.p
Steel Design Strength Maximum	Upper limit (range) of design tensile test's yield strength in megapascal	Mandatory	double	up to 1 d.p
Steel Rebar Test Report Number	Report Number of Steel Rebar Test (SRT)	Mandatory	string	
Steel Rebar Test Date	Date of performing Steel Rebar Test (SRT)	Mandatory	datetime	Field length = 25 YYYY-MM-DD[T]hh:mm:ss+hh:mm e.g. 2015-01-01T12:00:00+08:00 for UTC +8

Steel Rebar Test Result	Result of Steel Rebar Test (SRT) [Selection: True - Passed; False - Failed]	Mandatory	boolean	
Steel Rebar Test Standard	Test standard applied for performing Steel Rebar Test (SRT)	Mandatory	string	
Steel Rebar Test Remarks	Remarks for failed Steel Rebar Test (SRT) (i.e. to populate if "Failed" is selected for Steel Rebar Test Result)	Optional	string	Mandatory if steel_rebar_test_result = False
Steel Rebar Test Attachments	Supporting document attachments to Steel Rebar Test (SRT)	Mandatory	object	
Attachments	Attachments of Steel Rebar Test (SRT) (i.e. 10MB maximum file size per file)	Mandatory	array	maximum 1 file attachment
Filename	Filename of Steel Rebar Test (SRT) attachment (i.e. filename with extension)	Mandatory	string	Allowed file extensions are ".pdf", ".doc", ".docx", "xls", ".xlsx", ".jpg", ".jpeg", ".png", ".heic", ".gif", ".bmp", ".tiff", ".ppt", ".pptx"
File Content	File content of Steel Rebar Test (SRT) attachment (i.e. content stored in an encoded string format)	Mandatory	string	
Steel Rebar Test Details	Details of Steel Rebar Test (SRT) performed on each steel rebar sample	Mandatory	array	
Sample Number	Sample number of steel rebar sample	Mandatory	string	
Nominal Size	Nominal size of steel rebar sample in millimetre	Mandatory	integer	
Mass	Mass of steel rebar sample in kilogram	Optional	double	up to 3 d.p
Measured Length	Measured length of steel rebar sample in millimetre	Optional	integer	
Nominal Cross Sectional Area	Nominal cross sectional area of steel rebar sample in millimetre square	Optional	double	up to 1 d.p
Yield Point Load	Yield point load of steel rebar sample in kilonewton	Optional	double	up to 2 d.p
Tensile Test Yield Strength	Yield strength of tensile test performed on steel rebar sample in megapascal	Mandatory	double	up to 1 d.p

Bend Test Result	Result of bend test performed on steel rebar sample [Selection: 1 - Met Requirement; 2 - Failed to Meet Requirement; 3 - Not Performed]	Mandatory	integer	Field length = 1 Minimum value = 1 Maximum value = 3
Rebend Test Result	Result of rebend test performed on steel rebar sample [Selection: 1 - Met Requirement; 2 - Failed to Meet Requirement; 3 - Not Performed]	Mandatory	integer	Field length = 1 Minimum value = 1 Maximum value = 3

Site Inspection & Approval Records (ERSS Annex C-1) [New]

Data Element Name (Data Field)	Definition	Mandatory/ Optional	Data Field Type	Data Validation Rule - Format
Project Reference Number	Project Reference Number (e.g. A1234-12345-2022)	Mandatory	string	Field length = 16 1st character: Alphabet is either A or E 2nd-5th character: Number 6th character: Hyphen 7th-11th character: Alphanumeric 12th character : Hyphen 13th-16th character: Number
Project Title	Project Title (e.g. Proposed Construction of 50 Sty Mixed Commercial & Residential Building)	Mandatory	string	Field length = maximum 1000
Project Location Description	Project Location Description (e.g. 52 Jurong Gateway Road Singapore 608549, MK01 LOT 00001A, Interchange between Jalan Bahar and Pioneer Road)	Mandatory	string	Field length = maximum 2000
Project Main Contractor Company Name	Project main contractor company name as in ACRA	Mandatory	string	
Project Main Contractor Company Unique Entity Number	Project main contractor company Unique Entity Number (UEN) as in ACRA	Mandatory	string	Field length = 9-10 Businesses registered with ACRA(1) : NNNNNNNNX Local companies registered with ACRA(1) : YYYYNNNNNX All other entities which will be issued new UEN : TYYPQNNNNX where 'N' = A number 'P' = An alphabetical letter 'Q' = An alpha-numeric digit 'PQ' = Entity Type(2)

				'TYY' / 'SYY' / 'YYYY' = Year of issuance(3) 'X' = A check alphabet For example, the UEN for a limited liability partnership (LLP) formed on 1 January 2009 could be 'T09LL0001B' (1) No change from existing ACRA Registration Number (2) E.g. 'LL' = 'Limited Liability Partnership' (3) 'T' represents 20, 'S' represents '19' and 'R' represents '18'. E.g. T08 means year 2008, S99 means year 1999 and R00 means year 1800.
Total Number of Block / Zone	Total number of Block / Zone To indicate as "1" if the project does not segregated into any block or zone	Mandatory	integer	Minimum value = 1, Maximum value = 100
Block / Zone Name	Block / Zone Name (e.g. Block 571, Block 572, Zone A, Zone B)	Mandatory	string	Mandatory if total_number_of_block_zone > 1
Gridline Number	Gridline numbers for this ERSS construction	Mandatory	string	
Partial Location Attachments	Supporting document attachment to Partial Location Attachments	Mandatory	object	
Attachments	Attachments of Partial Location (i.e. 10MB maximum file size per file)	Mandatory	array	
Filename	Filename of partial location attachment (i.e. filename with extension)	Mandatory	string	Allowed file extensions are ".pdf", ".doc", ".docx", "xls", ".xlsx", ".jpg", ".jpeg", ".png", ".heic", ".gif", ".bmp", ".tiff", ".ppt", ".pptx"
File Content	File content of partial location attachment (i.e. content stored in an encoded string format)	Mandatory	string	
Geotechnical Building Works	Geotechnical Building Works (GBW) exists in the project: [Selection: True - Yes False - No]	Mandatory	boolean	

Declaration For Annex-C1 Submission	Declaration if this is the last submission of Annex-C1 ERSS: [Selection: True - Yes False - No]	Mandatory	boolean	
Critical Construction Stage	Critical Construction Stage: [Selection: 1 - Completion of installation of embedded walls, piling or kingpost, or ground improvement 2 - At strut/support level 3 - At final excavation level 4 - Removal of strut/support/removal of wall 5 - Others]	Mandatory	integer	Minimum value = 1, Maximum value = 5
Critical Construction Stage Others	Description of Critical Construction Stage (i.e. to populate if “Others” is selected for Critical Construction Stage).	Optional	string	Mandatory if critical_construction_stage = 5
Installed or Removed Strut/Support	Strut number of the installed or removed strut (or support) (e.g. S1, S2, RL89, RL, 99, etc.)	Optional	integer	Mandatory if critical_construction_stage = 2 and 4 Minimum value = 1, Maximum value = 100
Total Strut/Support	Total number of strut (or support) levels within this ERSS report	Optional	integer	Mandatory if critical_construction_stage = 2 and 4 Minimum value = 1, Maximum value = 100
Section A: Technical Controller Declaration Date	Section A: Date of declaration by Technical Controller, that instrumentation results, as-built ERSS information, and actual ground condition encountered at site are attached together.	Mandatory	datetime	Field length = 25 YYYY-MM-DD[T]hh:mm:ss+hh:mm e.g. 2015-01-01T12:00:00+08:00 for UTC+8
Technical Controller Person Name	Technical Controller name as in Unique Identification Number (UIN), i.e. National Registration Identity Card (NRIC) or Foreign Identification Number (FIN)	Mandatory	string	Field length = Maximum 66

Section B1: Qualified Person Supervision Inspection Date	Section B1: Date of inspection by Qualified Person (supervision)	Mandatory	datetime	Field length = 25 YYYY-MM-DD[T]hh:mm:ss+hh:mm e.g. 2015-01-01T12:00:00+08:00 for UTC+8
Qualified Person Supervision Deviation Status	Deviation status by Qualified Person (supervision) after the inspection. To report any deviations from approved plans: [Selection: Yes - There is deviation No - There is no deviation	Mandatory	boolean	
Qualified Person Supervision Deviation Comments	Deviation Comments by Qualified Person (supervision), if any	Optional	string	
Qualified Person Supervision Geotechnical Inspection Date for Geotechnical Building Works	Date and time of inspection by Qualified Person (supervision)(geotechnical) for Geotechnical Building Works (GBW), Section B1	Optional	datetime	Mandatory if geotechnical_building_works = True Field length = 25 YYYY-MM-DD[T]hh:mm:ss+hh:mm e.g. 2015-01-01T12:00:00+08:00 for UTC+8
Qualified Person Supervision Geotechnical Deviation Status	Deviation status from Qualified Person (supervision)(geotechnical) after the inspection: [Selection: Yes - There is deviation No - There is no deviation	Optional	boolean	Mandatory if geotechnical_building_works = True
Qualified Person Supervision Geotechnical Deviation Comments	Deviation Comments by Qualified Person (supervision)(geotechnical), if any	Optional	string	
Section B2: Qualified Person	Section B2: Date and time of approval by Qualified Person (supervision)	Mandatory	datetime	Field length = 25 YYYY-MM-DD[T]hh:mm:ss+hh:mm

Supervision Approval Date				e.g. 2015-01-01T12:00:00+08:00 for UTC+8 Note, in the ISO 8601 Date-Time format, the +hh:mm portion indicates the timezone offset from UTC. For example, +08:00 represents Singapore Standard Time (UTC+8).
Qualified Person Supervision Assessment	Qualified Person (supervision) and Qualified Person (supervision)(geotechnical)'s assessment that the site and its neighbouring areas has been inspected, performance of the constructed ERSS, results of instrumentation and monitoring readings, and the actual ground conditions has been assessed. ERSS is safe for the works to proceed to the next construction stage: [Selection: True - ERSS is fully in accordance with the approved plans. Approval granted for the builder to proceed to the next construction stage False - ERSS does not require a re-design from the changes to the approved plan. Approval granted for the builder to proceed to the next construction stage]	Mandatory	boolean	
Qualified Person Supervision Person Name	Qualified Person (supervision)'s name as in Unique Identification Number (UIN), i.e. National Registration Identity Card (NRIC) or Foreign Identification Number (FIN)	Mandatory	string	Field length = maximum 66

Qualified Person Supervision Registration Number	Qualified Person (supervision)'s registration number as registered with Professional Engineers Board (PEB) (e.g. 0123)	Mandatory	string	Characters = 4 numeric (may have leading zero)
Qualified Person Supervision Geotechnical Approval Date For Geotechnical Building Works	Date and time of approval by Qualified Person (supervision)(geotechnical) for Geotechnical Building Works (GBW), for Section B2	Optional	datetime	Mandatory if geotechnical_building_works = True Field length = 25 YYYY-MM-DD[T]hh:mm:ss+hh:mm e.g. 2015-01-01T12:00:00+08:00 for UTC+8
Qualified Person Supervision Geotechnical Name	Qualified Person (supervision)(geotechnical)'s name as in Unique Identification Number (UIN), i.e. National Registration Identity Card (NRIC) or Foreign Identification Number (FIN)	Optional	string	Mandatory if geotechnical_building_works = True Field length = Maximum 66
Qualified Person Supervision Geotechnical Professional Engineer Registration Number	Qualified Person (supervision)(geotechnical)'s registration number as registered with Professional Engineers Board (PEB) (e.g. 0123)	Optional	string	Mandatory if geotechnical_building_works = True Characters = 4 numeric (may have leading zero)

Certification & Monitoring Building Settlement (Annex D) [New]

Data Element Name (Data Field)	Definition	Mandatory/ Optional	Data Field Type	Data Validation Rule - Format
Project Reference Number	Project Reference Number (e.g. A1234-12345-2022)	Mandatory	string	Field length = 16 1st character: Alphabet is either A or E 2nd-5th character: Number 6th character: Hyphen 7th-11th character: Alphanumeric 12th character : Hyphen 13th-16th character: Number
Project Title	Project Title (e.g. Proposed Construction of 50 Sty Mixed Commercial & Residential Building)	Mandatory	string	Field length = maximum 1000
Project Location Description	Project Location Description (e.g. 52 Jurong Gateway Road Singapore 608549, MK01 LOT 00001A, Interchange between Jalan Bahar and Pioneer Road)	Mandatory	string	Field length = maximum 2000
Project Main Contractor Company Name	Project main contractor company name as in ACRA	Mandatory	string	
Project Main Contractor Company Unique Entity Number	Project main contractor company Unique Entity Number (UEN) as in ACRA	Mandatory	string	Field length = 9-10 Businesses registered with ACRA(1) : NNNNNNNNX Local companies registered with ACRA(1) : YYYYNNNNNX All other entities which will be issued new UEN : TYYPQNNNNX where 'N' = A number 'P' = An alphabetical letter 'Q' = An alpha-numeric digit 'PQ' = Entity Type(2)

				'TYY' / 'SYY' / 'YYYY' = Year of issuance(3) 'X' = A check alphabet For example, the UEN for a limited liability partnership (LLP) formed on 1 January 2009 could be 'T09LL0001B' (1) No change from existing ACRA Registration Number (2) E.g. 'LL' = 'Limited Liability Partnership' (3) 'T' represents 20, 'S' represents '19' and 'R' represents '18'. E.g. T08 means year 2008, S99 means year 1999 and R00 means year 1800.
Total Number Of Block / Zone	Total number of Block / Zone To indicate as "1" if the project does not segregated into any block or zone	Mandatory	integer	Minimum value = 1, Maximum value = 100
Block / Zone Name	Block / Zone Name (e.g. Block 571, Block 572, Zone A, Zone B)	Mandatory	string	
Maximum Number Of Storeys, Excluding Basement	Maximum Number of Storeys of building (excluding basement)	Mandatory	integer	Minimum value = 1
Number Of Storeys Reached, Excluding basement	Number of Storeys reached (excluding basement)	Mandatory	integer	Minimum value = 1
Geotechnical Building Works	Geotechnical Building Works (GBW) exists in the block/zone mentioned above: [Selection: True - Yes False - No]	Mandatory	boolean	
Qualified Person Supervision Structural Person Name	Qualified Person (supervision)(structural)'s name as in Unique Identification Number (UIN), i.e. National Registration Identity Card	Mandatory	string	Field length = maximum 66

	(NRIC) or Foreign Identification Number (FIN)			
Qualified Person Supervision Structural Registration Number	Qualified Person (supervision)(structural)'s registration number as registered with Professional Engineers Board (PEB) (e.g. 0123)	Mandatory	string	Field length = 4 Field value = Numeric, may may have leading zero
Qualified Person Supervision Geotechnical Name	Qualified Person (supervision)(geotechnical)'s name as in Unique Identification Number (UIN), i.e. National Registration Identity Card (NRIC) or Foreign Identification Number (FIN)	Optional	string	Field length = maximum 66 Mandatory if geotechnical_building_works = True
Qualified Person Supervision Geotechnical Professional Engineer Registration Number	Qualified Person (supervision)(geotechnical)'s registration number as registered with Professional Engineers Board (PEB) (e.g. 0123)	Optional	string	Field length = 4 Field value = Numeric, may may have leading zero Mandatory if geotechnical_building_works = True
Recording Date Time	Date and time of recording for Annex D Monitoring of Building Settlement	Mandatory	datetime	Field length = 25 YYYY-MM-DD[T]hh:mm:ss+hh:mm e.g. 2015-01-01T12:00:00+08:00 for UTC+8 Note, in the ISO 8601 Date-Time format, the +hh:mm portion indicates the timezone offset from UTC. For example, +08:00 represents Singapore Standard Time (UTC+8).
Allowable Building Settlement	Allowable building settlement by design, in millimetres	Mandatory	integer	

Maximum Measured Building Settlement	Maximum building settlement measured, in millimetres	Mandatory	integer	
Allowable Differential Building Settlement	Allowable difference between largest and smallest building settlement, in millimetres	Mandatory	integer	ratio 1:X
Maximum Measured Differential Building Settlement	Maximum difference between largest and smallest measured building settlement, in millimetres	Mandatory	integer	ratio 1:X
Qualified Person Supervision Observation	Qualified Person (supervision)'s observation on the building settlement, that instrumentation monitoring results, obtained at time of reading of floor reached as submitted in this form, is satisfactory and do not exceed the design limits in accordance with the approved set of structural plans/calculations: [Selection: True - Yes False - No]	Mandatory	boolean	
Qualified Person Supervision Other Comments	Qualified Person (supervision)'s other comments (if any)	Optional	string	

Site Progress [New]

Data Element Name (Data Field)	Definition	Mandatory/ Optional	Data Field Type	Data Validation Rule - Format
Project Reference Number	Project Reference Number (e.g. A1234-12345-2022)	Mandatory	string	Field length = 16 1st character: Alphabet is either A or E 2nd-5th character: Number 6th character: Hyphen 7th-11th character: Alphanumeric 12th character : Hyphen 13th-16th character: Number
Project Title	Project Title (e.g. Proposed Construction of 50 Sty Mixed Commercial & Residential Building)	Mandatory	string	Field length = maximum 1000
Project Location Description	Project Location Description (e.g. 52 Jurong Gateway Road Singapore 608549, MK01 LOT 00001A, Interchange between Jalan Bahar and Pioneer Road)	Mandatory	string	Field length = maximum 1000
Project Main Contractor Company Name	Project main contractor company name as in ACRA	Mandatory	string	
Project Main Contractor Company Unique Entity Number	Project main contractor company Unique Entity Number (UEN) as in ACRA	Mandatory	string	Field length = 9-10 Businesses registered with ACRA(1) : NNNNNNNNX Local companies registered with ACRA(1) : YYYYNNNNNX All other entities which will be issued new UEN : TYYPQNNNNX where 'N' = A number 'P' = An alphabetical letter 'Q' = An alpha-numeric digit 'PQ' = Entity Type(2)

				'TYY' / 'SYY' / 'YYYY' = Year of issuance(3) 'X' = A check alphabet For example, the UEN for a limited liability partnership (LLP) formed on 1 January 2009 could be 'T09LL0001B' (1) No change from existing ACRA Registration Number (2) E.g. 'LL' = 'Limited Liability Partnership' (3) 'T' represents 20, 'S' represents '19' and 'R' represents '18'. E.g. T08 means year 2008, S99 means year 1999 and R00 means year 1800.
Date of Update	Date of progress update reported on site	Mandatory	date-time	Field length = 25 YYYY-MM-DD[T]hh:mm:ss+hh:mm e.g. 2015-01-01T12:00:00+08:00 for UTC+8
Total number of Block / Zone	Total number of Block / Zone To indicate as "1" if the project does not segregate into any block or zone	Mandatory	integer	Minimum value = 1, Maximum value = 100
Block / Zone Name	Block / Zone Name (e.g. Block 571, Block 572, Zone A, Zone B)	Mandatory	string	
Project Status	Project Status: [Selection: 1 - Active; 2 - Paused - SWO 3 - Paused - Permit Revoked 4 - Structural Completed; 5 - Project Completed]	Mandatory	integer	Minimum value = 1, Maximum value = 5
Demolition Progress	Work done for Demolition in this block/zone, unit in % (Do not fill if Demolition is not applicable to this block/zone. A value of 0 indicates work is required but has not commenced)	Optional	integer	if project_status = 1, demolition_progress or erss_progress or piling_progress or substructure_progress or superstructure_progress must be provided. Minimum value = 0 Maximum value = 100

ERSS Progress	Work done for ERSS in this block/zone, unit in % (Do not fill if ERSS is not applicable to this block/zone. A value of 0 indicates work is required but has not commenced)	Optional	integer	if project_status = 1, demolition_progress or erss_progress or piling_progress or substructure_progress or superstructure_progress must be provided. Minimum value = 0 Maximum value = 100
Piling Progress	Work done for Piling in this block/zone, unit in % (Do not fill if Piling is not applicable to this block/zone. A value of 0 indicates work is required but has not commenced)	Optional	integer	if project_status = 1, demolition_progress or erss_progress or piling_progress or substructure_progress or superstructure_progress must be provided. Minimum value = 0 Maximum value = 100
Substructure Progress	Work done for Substructure in this block/zone, unit in % (Do not fill if Substructure is not applicable to this block/zone. A value of 0 indicates work is required but has not commenced)	Optional	integer	if project_status = 1, demolition_progress or erss_progress or piling_progress or substructure_progress or superstructure_progress must be provided. Minimum value = 0 Maximum value = 100
Superstructure Progress	Work done for Superstructure in this block/zone, unit in % (Do not fill if Superstructure is not applicable to this block/zone. A value of 0 indicates work is required but has not commenced)	Optional	integer	if project_status = 1, demolition_progress or erss_progress or piling_progress or substructure_progress or superstructure_progress must be provided. Minimum value = 0 Maximum value = 100
Site Progress Attachments	Supporting document attachment to Site Progress	Optional	object	
Attachments	Attachments of Site Progress	Optional	array	Maximum 1 file attachment
Filename	Filename of Site Progress attachment (i.e. filename with extension)	Optional	string	Allowed file extensions are ".pdf", ".doc", ".docx", "xls", ".xlsx", ".jpg", ".jpeg", ".png", ".heic", ".gif", ".bmp", ".tiff", ".ppt", ".pptx"
File Content	File content of Site Progress attachment (i.e. content stored in an encoded string format)	Optional	string	

QP and SS Attendance [New]

Data Element Name (Data Field)	Definition	Mandatory/ Optional	Data Field Type	Data Validation Rule - Format
Project Reference Number	Project Reference Number (e.g. A1234-12345-2022)	Mandatory	string	Field length = 16 1st character: Alphabet is either A or E 2nd-5th character: Number 6th character: Hyphen 7th-11th character: Alphanumeric 12th character : Hyphen 13th-16th character: Number
Project Title	Project Title (e.g. Proposed Construction of 50 Sty Mixed Commercial & Residential Building)	Mandatory	string	Field length = maximum 1000
Project Location Description	Project Location Description (e.g. 52 Jurong Gateway Road Singapore 608549, MK01 LOT 00001A, Interchange between Jalan Bahar and Pioneer Road)	Mandatory	string	Field length = maximum 2000
Project Main Contractor Company Name	Project main contractor company name as in ACRA	Mandatory	string	
Project Main Contractor Company Unique Entity Number	Project main contractor company Unique Entity Number (UEN) as in ACRA	Mandatory	string	Field length = 9-10 Businesses registered with ACRA(1) : NNNNNNNNX Local companies registered with ACRA(1) : YYYYNNNNNX All other entities which will be issued new UEN : TYYPQNNNNX where 'N' = A number 'P' = An alphabetical letter 'Q' = An alpha-numeric digit 'PQ' = Entity Type(2)

				'TYY' / 'SYY' / 'YYYY' = Year of issuance(3) 'X' = A check alphabet For example, the UEN for a limited liability partnership (LLP) formed on 1 January 2009 could be 'T09LL0001B' (1) No change from existing ACRA Registration Number (2) E.g. 'LL' = 'Limited Liability Partnership' (3) 'T' represents 20, 'S' represents '19' and 'R' represents '18'. E.g. T08 means year 2008, S99 means year 1999 and R00 means year 1800.
Project Main Contractor Company Unique Entity Number	Project main contractor company Unique Entity Number (UEN) as in ACRA	Mandatory	string	Field length = 9-10 Businesses registered with ACRA(1) : NNNNNNNNX Local companies registered with ACRA(1) : YYYYNNNNNX All other entities which will be issued new UEN : TYYPQNNNNX where 'N' = A number 'P' = An alphabetical letter 'Q' = An alpha-numeric digit 'PQ' = Entity Type(2) 'TYY' / 'SYY' / 'YYYY' = Year of issuance(3) 'X' = A check alphabet For example, the UEN for a limited liability partnership (LLP) formed on 1 January 2009 could be 'T09LL0001B' (1) No change from existing ACRA Registration Number (2) E.g. 'LL' = 'Limited Liability Partnership' (3) 'T' represents 20, 'S' represents '19' and 'R' represents '18'. E.g. T08 means year 2008, S99 means year 1999 and R00 means year 1800.

Qualified Person or Site Supervisor Person Name	Qualified Person (QP) or Site Supervisor (SS) person name as in Unique Identification Number (UIN), i.e. National Registration Identity Card (NRIC) or Foreign Identification Number (FIN)	Mandatory	string	Field length = maximum 66
Work Category	Work Category: [Selection: 1 - Resident Engineer; 2 - Resident Engineer (Geo) 3 - Resident Technical Officer; 4 - Qualified Person Design (ST) 5 - Qualified Person Design (Geo) 6 - Qualified Person Supervision (ST); 7 - Qualified Person Supervision (Geo); 8 - Qualified Person's Engineer]	Mandatory	integer	Minimum value = 1, Maximum value = 8
Registered Engineer Registered Technical Officer Registration Number	Registered Engineer / Registered Technical Officer (RE/RTO) registration number as registered with Institute of Engineers Singapore (IES) (e.g. RE-1234, RTO-1234)	Optional	string	Mandatory if work_category = 1,2,3 Min characters = 7 Alphanumeric Max characters = 8 Alphanumeric (including special character hyphen)
Professional Engineer Registration Number	Professional Engineer Registration Number as registered with PEB (e.g. 0123, 1234)	Optional	string	Mandatory if work_category = 4,5,6,7 Characters = 4 numeric (may have leading zero)
Registered Engineer Registered Technical Officer Type of Work	Registered Engineer Registered Technical Officer Type of Work: [Selection: 1 - Full time; 2 - Part time]	Optional	integer	Mandatory if work_category = 1,2,3 Minimum value = 1, Maximum value = 2
Time In	Person time-in at project site	Mandatory	date-time	Field length = 25

				YYYY-MM-DD[T]hh:mm:ss+hh:mm e.g. 2015-01-01T12:00:00+08:00 for UTC +8
Time Out	Person time-out at project site	Mandatory	date-time	Field length = 25 YYYY-MM-DD[T]hh:mm:ss+hh:mm e.g. 2015-01-01T12:00:00+08:00 for UTC +8 time_out must be later than time_in
Purpose to Entering Site	Purpose to Entering Site: [Selection: 1 - Meeting; 2 - Inspection; 3 - Meeting and Inspection;	Optional	integer	Mandatory if registered_engineer_registered_technical_officer_type_of_work = 1 Minimum value = 1, Maximum value = 3

Notification to Commissioner of Building Control (CBC) [New]

Data Element Name (Data Field)	Definition	Mandatory/ Optional	Data Field Type	Data Validation Rule - Format
Project Reference Number	Project Reference Number (e.g. A1234-12345-2022)	Mandatory	string	Field length = 16 1st character: Alphabet is either A or E 2nd-5th character: Number 6th character: Hyphen 7th-11th character: Alphanumeric 12th character : Hyphen 13th-16th character: Number
Project Title	Project Title (e.g. Proposed Construction of 50 Sty Mixed Commercial & Residential Building)	Mandatory	string	Field length = maximum 1000
Project Location Description	Project Location Description (e.g. 52 Jurong Gateway Road Singapore 608549, MK01 LOT 00001A, Interchange between Jalan Bahar and Pioneer Road)	Mandatory	string	Field length = maximum 2000
Project Processing Officer Email	Email address of Commissioner of Building Control (CBC)'s processing officer to notify	Mandatory	string	email domain must be @bca.gov.sg
Project Main Contractor Company Name	Project main contractor company name as in ACRA	Mandatory	string	
Project Main Contractor Company Unique Entity Number	Project main contractor company Unique Entity Number (UEN) as in ACRA	Mandatory	string	Field length = 9-10 Businesses registered with ACRA(1) : NNNNNNNNX Local companies registered with ACRA(1) : YYYYNNNNNX All other entities which will be issued new UEN : TYYPQNNNNX where 'N' = A number

				'P' = An alphabetical letter 'Q' = An alpha-numeric digit 'PQ' = Entity Type(2) 'TYY' / 'SYY' / 'YYYY' = Year of issuance(3) 'X' = A check alphabet For example, the UEN for a limited liability partnership (LLP) formed on 1 January 2009 could be 'T09LL0001B' (1) No change from existing ACRA Registration Number (2) E.g. 'LL' = 'Limited Liability Partnership' (3) 'T' represents 20, 'S' represents '19' and 'R' represents '18'. E.g. T08 means year 2008, S99 means year 1999 and R00 means year 1800.
Registered Engineer Registered Technical Officer Person Name	Registered Engineer / Registered Technical Officer (RE/RTO) name as in Unique Identification Number (UIN) i.e. National Registration Identity Card (NRIC) or Foreign Identification Number (FIN)	Optional	string	Field length = maximum 66
Registered Engineer Registered Technical Officer Registration Number	Registered Engineer / Registered Technical Officer (RE/RTO) registration number as registered with Institute of Engineers Singapore (IES) (e.g. RE-1234, RTO-1234)	Optional	string	Field length = 7-8 Field value = Alphanumeric, including special character i.e. hyphen
Qualified Person Supervision Structural Person Name	Qualified Person (supervision) (structural) name as in Unique Identification Number (UIN) i.e. National Registration Identity Card (NRIC) or Foreign Identification Number (FIN)	Mandatory	string	Field length = maximum 66

Qualified Person Supervision Structural Registration Number	Qualified Person (supervision) (structural) registration number as registered with Professional Engineers Board (PEB) (e.g. 0123)	Mandatory	string	Field length = 4 Field value = Numeric, may may have leading zero
Qualified Person Design Structural Person Name	Qualified Person (design) (structural) name as in Unique Identification Number (UIN) i.e. National Registration Identity Card (NRIC) or Foreign Identification Number (FIN)	Optional	string	Field length = max 66
Qualified Person Design Structural Registration Number	Qualified Person (design) (structural) Professional Engineer registration number as registered with Professional Engineers Board (PEB)	Optional	string	Field length = 4 Field value = Numeric, may may have leading zero
Notification Commissioner Building Control Attachments	Supporting document attachments to Notification to Commissioner of Building Control	Mandatory	object	
Attachments	Attachments of Notification to Commissioner of Building Control (i.e. maximum 1 attachment of each 30MB maximum file size)	Mandatory	array	maximum 1 attachment of 30MB maximum file size
Filename	Filename of Notification to Commission of Building Control attachment (i.e. filename with extension)	Mandatory	string	Allowed file extensions are ".pdf", ".doc", ".docx", "xls", ".xlsx", ".jpg", ".jpeg", ".png", ".heic", ".gif", ".bmp", ".tiff", ".ppt", ".pptx", ".msg", ".eml"
File Content	File content of Notification to Commission of Building Control attachment (i.e. content stored in an encoded string format)	Mandatory	string	
Project Notification Date	Date when project notification is performed	Mandatory	datetime	Field length = 25 YYYY-MM-DD[T]hh:mm:ss+hh:mm e.g. 2015-01-01T12:00:00+08:00 for UTC +8

Project Notification Type	Type of project notification to Commissioner of Building Control (CBC) [Selection: 1 - Excessive Movements 2 - Working Load Test Failure 3 - Ultimate Load Test Failure 4 - Concrete Cube Test Failure 5 - Steel Rebar Test Failure 6 - Steel Element Test Failure 7 - Critical Works]	Mandatory	integer	Field length = 1 Minimum value = 1 Maximum value = 7
Project Document Reference Number	Reference number of test or report document relating to project notifications is: - Excessive Movements is to provide "Instrumentation & Monitoring Report Number" - Working Load Test Failure is to provide "Pile Reference Number" - Ultimate Load Test Failure is to provide "Pile Reference Number" - Concrete Cube Test Failure is to provide "Concrete Cube Test Job Reference Number" - Steel Rebar Test Failure is to provide "Steel Rebar Test Report Number" - Steel Element Test Failure is to provide "Steel Element Test Report Number" - Critical Works is to provide "Plan Reference Number of Critical Works"	Mandatory	string	
Project Notification Description	Description and content of project notification to Commissioner of Building Control (CBC)	Mandatory	string	Field length = maximum 2000

Project Notification Status	Status of project notification to Commissioner of Building Control (CBC). (i.e. to notify and update rectification and closure if Project Notification Type is "Excessive Movements", "Working Load Test Failure", "Ultimate Load Test Failure", "Concrete Cube Test Failure", "Steel Rebar Test Failure" and "Steel Element Test Failure"). (i.e. to only notify if Project Notification Type is "Critical Works"). [Selection: 1 - Notify 2 - Rectification Update 3 - Closure]	Mandatory	integer	Field length = 1 Minimum value = 1 Maximum value = 3
Project Rectification Remarks	Rectification remarks of project notification to Commissioner of Building Control (CBC) (i.e. to populate if "Rectification Update" or "Closure" is selected for Project Notification Status)	Optional	string	Field length = maximum 2000 Mandatory if project_notification_status = 2 or 3
Project Rectification Date	Date when project rectification is performed (i.e. to populate if "Rectification Update" or "Closure" is selected for Project Notification Status)	Optional	datetime	Field length = 25 YYYY-MM-DD[T]hh:mm:ss+hh:mm e.g. 2015-01-01T12:00:00+08:00 for UTC +8 Mandatory if project_notification_status = 2 or 3

Project Document [New]

Data Element Name (Data Field)	Definition	Mandatory/ Optional	Data Field Type	Data Validation Rule - Format
Project Reference Number	Project Reference Number (e.g. A1234-12345-2022)	Mandatory	string	Field length = 16 1st character: Alphabet is either A or E 2nd-5th character: Number 6th character: Hyphen 7th-11th character: Alphanumeric 12th character : Hyphen 13th-16th character: Number
Project Title	Project Title (e.g. Proposed Construction of 50 Sty Mixed Commercial & Residential Building)	Mandatory	string	Field length = maximum 1000
Project Location Description	Project Location Description (e.g. 52 Jurong Gateway Road Singapore 608549, MK01 LOT 00001A, Interchange between Jalan Bahar and Pioneer Road)	Mandatory	string	Field length = maximum 2000
Project Main Contractor Company Name	Project main contractor company name as in ACRA	Mandatory	string	
Project Main Contractor Company Unique Entity Number	Project main contractor company Unique Entity Number (UEN) as in ACRA	Mandatory	string	Field length = 9-10 Businesses registered with ACRA(1) : NNNNNNNNX Local companies registered with ACRA(1) : YYYYNNNNNX All other entities which will be issued new UEN : TYYPQNNNNX where 'N' = A number 'P' = An alphabetical letter 'Q' = An alpha-numeric digit 'PQ' = Entity Type(2)

				'TYY' / 'SYY' / 'YYYY' = Year of issuance(3) 'X' = A check alphabet For example, the UEN for a limited liability partnership (LLP) formed on 1 January 2009 could be 'T09LL0001B' (1) No change from existing ACRA Registration Number (2) E.g. 'LL' = 'Limited Liability Partnership' (3) 'T' represents 20, 'S' represents '19' and 'R' represents '18'. E.g. T08 means year 2008, S99 means year 1999 and R00 means year 1800.
Registered Engineer Registered Technical Officer Person Name	Registered Engineer / Registered Technical Officer (RE/RTO) name as in Unique Identification Number (UIN) i.e. National Registration Identity Card (NRIC) or Foreign Identification Number (FIN)	Optional	string	Field length = maximum 66
Registered Engineer Registered Technical Officer Registration Number	Registered Engineer / Registered Technical Officer (RE/RTO) registration number as registered with Institute of Engineers Singapore (IES) (e.g. RE-1234, RTO-1234)	Optional	string	Field length = 7-8 Field value = Alphanumeric, including special character i.e. hyphen
Qualified Person Supervision Structural Person Name	Qualified Person (supervision) (structural) name as in Unique Identification Number (UIN) i.e. National Registration Identity Card (NRIC) or Foreign Identification Number (FIN) (i.e. to populate if "Pre-Construction Survey", "Welding Test", "Piling Plan", "Mass Engineered Timber Test" , "360 Capture" or "Unstructured Data" is selected for Project Document Type)	Optional	string	Field length = maximum 66 Mandatory if project_document_type = 1, 3 or 5 to 20

Qualified Person Supervision Structural Registration Number	Qualified Person (supervision) (structural) registration number as registered with Professional Engineers Board (PEB) (e.g. 0123) (i.e. to populate if "Pre-Construction Survey", "Welding Test", "Piling Plan", "Mass Engineered Timber Test", "360 Capture" or "Unstructured Data" is selected for Project Document Type)	Optional	string	Field length = 4 Field value = Numeric, may may have leading zero Mandatory if project_document_type = 1, 3 or 5 to 20
Qualified Person Supervision Geotechnical Person Name	Qualified Person (supervision) (geotechnical) name as in Unique Identification Number (UIN) i.e. National Registration Identity Card (NRIC) or Foreign Identification Number (FIN)	Optional	string	Field length = maximum 66
Qualified Person Supervision Geotechnical Registration Number	Qualified Person (supervision) (geotechnical) registration number as registered with Professional Engineers Board (PEB) (e.g. 0123)	Optional	string	Field length = 4 Field value = Numeric, may may have leading zero
Qualified Person Design Structural Person Name	Qualified Person (design) (structural) name as in Unique Identification Number (UIN) i.e. National Registration Identity Card (NRIC) or Foreign Identification Number (FIN) (i.e. to populate if "Temporary Building Design" or "Qualified Person Design Approval for Proprietary Product" is selected for Project Document Type)	Optional	string	Field length = maximum 66 Mandatory if project_document_type = 2 or 4
Qualified Person Design Structural Registration Number	Qualified Person (design) (structural) registration number as registered with Professional Engineers Board (PEB) (i.e. to populate if "Temporary Building	Optional	string	Field length = 4 Field value = Numeric, may may have leading zero

	Design" or "Qualified Person Design Approval for Proprietary Product" is selected for Project Document Type)			Mandatory if project_document_type = 2 or 4
Project Document Type	Type of Project Document for submission [Selection: 1 - Pre-Construction Survey; 2 - Temporary Building Design; 3 - Welding Test; 4 - Qualified Person Design Approval for Proprietary Product; 5 - Piling Plan (with annotation of pile reference number); 6 - Mass Engineered Timber Test; 7 - 360 Capture; 8 - Piling Installation Record (Unstructured Data); 9 - Working Load Test (Unstructured Data); 10 - Ultimate Load Test (Unstructured Data); 11 - Concrete Cube Test (Unstructured Data); 12 - Steel Rebar Test (Unstructured Data); 13 - Steel Element Test (Unstructured Data); 14 - Site Progress (Unstructured Data); 15 - Qualified Person Attendance (Unstructured Data); 16 - Site Supervisor Attendance (Unstructured Data); 17 - Instrumentation & Monitoring (Unstructured Data);	Mandatory	integer	Field length = maximum 2 Minimum value = 1 Maximum value = 23

	18 - ERSS Annex C-1 (Unstructured Data); 19 - Monitoring Building Settlement Annex D (Unstructured Data) 20 - Site Supervision Plan 21 - Inspection Form 22 - Testing Record 23 - Other Project Document]			
Project Document Type Other	Description of other project document type (i.e. to populate if "Other Project Document" is selected for Project Document Type data field)	Optional	string	Mandatory if project_document_type = 23
Project Document Reference Number	Reference number for respective type of project document is: - Pre-Construction Survey is to provide "Survey Report Number" - Temporary Building Design is to provide "Design Reference Number" - Welding Test is to provide "Test Report Number" - Qualified Person Design Approval for Proprietary Product is to provide "Design Approval Number" - Piling Plan (with annotation of pile reference number) is to provide "Piling Plan Number" - Mass Engineered Timber Test is to provide "Test Report Number" - 360 Capture is to provide "360 Capture Reference Number" - Piling Installation Record (Unstructured Data) is to provide "Pile Reference Number"	Mandatory	string	

	- Working Load Test (Unstructured Data) is to provide "Pile Reference Number" - Ultimate Load Test (Unstructured Data) is to provide "Pile Reference Number" - Concrete Cube Test (Unstructured Data) is to provide "Concrete Cube Test Job Reference Number" - Steel Rebar Test (Unstructured Data) is to provide "Steel Rebar Test Report Number" - Steel Element Test (Unstructured Data) is to provide "Steel Element Test Report Number" - Site Progress (Unstructured Data) is to provide "Submission Date" (i.e. YYYY-MM-DD as in UTC+8) - Qualified Person Attendance (Unstructured Data) is to provide "Submission Date" (i.e. YYYY-MM-DD as in UTC+8) - Site Supervisor Attendance (Unstructured Data) is to provide "Submission Date" (i.e. YYYY-MM-DD as in UTC+8) - Instrumentation & Monitoring (Unstructured Data) is to provide "Report Number" - ERSS Annex C-1 (Unstructured Data) is to provide "Zone and Gridline Number" - Monitoring Building Settlement Annex D (Unstructured Data) is to provide			

	"Zone Number" - Site Supervision Plan is to provide "Issue Date" (i.e. YYYY-MM-DD as in UTC+8) - Inspection Form is to provide "Document Date" (i.e. YYYY-MM-DD as in UTC+8) - Testing Record is to provide "Document Date" (i.e. YYYY-MM-DD as in UTC+8) - Other Project Document is to provide "Project Document Number"			
Project Document Remarks	Remarks of project document e.g. to indicate findings of survey, approval of design and plan, passed/failed status of test	Optional	string	Field length = maximum 2000
360 Capture Web Link	Web link of 360 capture (i.e. to populate if "360 Capture" is selected for Project Document Type)	Optional	string	Mandatory if project_document_type = 7
Project Document Attachments	Supporting document attachments to Project Document	Optional	object	
Attachments	Attachments of project document (i.e. to populate all documents except if "Other Project Document" is selected for Project Document Type) (i.e. maximum 1 attachment of each 200MB maximum file size)	Optional	array	maximum 1 attachment of 200MB maximum file size Mandatory if project_document_type = 1 to 6 or 8 to 23
Filename	Filename of project document attachment (i.e. filename with extension)	Optional	string	Allowed file extensions are ".pdf", ".doc", ".docx", "xls", ".xlsx", ".jpg", ".jpeg", ".png", ".heic", ".gif", ".bmp", ".tiff", ".ppt", ".pptx"
File Content	File content of project document attachment (i.e. content stored in an encoded string format)	Optional	string	

Appendix B – Safety Datasets (Environment, Health and Safety)

Non-Conformity Report (NCR)/ Site Safety Inspection Negative Observation [Pending Updates]

Data Element Name (Data Field)	Definition	Mandatory/ Optional	Data Field Type	Data Validation Rule - Format
Report Identification Number	Report unique serial number generated by site management platform	Mandatory	string	
Report Date Time	Report submission date and time	Mandatory	date	YYYY-MM-DD
Report Revision	Report revision, starting value to be 1 and subsequent revision to be incremental by 1	Mandatory	int8	Minimum value = 1
Safety Inspection Observed Date/ Time	Date and time when safety inspection is observed	Mandatory	date-time	YYYYMMDD HH:MM:SS
Safety Inspection Trade	Trade relating to the safety inspection (for HDB), as per HDB reference guide (e.g. A1, B3, C5)	Optional	string	Min characters = 3, Max characters = 4, Range: A.1-A,6, B.1-B.17, C.1-C.15, D.1-D.7
Project Reference Number	Project Building Plan (BP) number issued by URA (e.g. A1234-12345-2022)	Mandatory	string	
Project Name	Project name or development name	Mandatory	string	
Location Gridline	Location (where safety inspection is observed) gridlines as per working drawings	Optional	string	
Location Zone	Location (where safety inspection is observed) zone as per working drawings	Optional	string	
Location Block	Location (where safety inspection is observed) block number	Optional	string	
Location Storey	Location (where safety inspection is observed) storey number	Optional	string	
Location Unit	Location (where safety inspection is observed) unit number	Optional	string	

Location Area	Location (where safety inspection is observed) area [Selection: 1 - Carpark; 2 - Bathroom; 3 - Balcony; 4 - Bedroom; 5 - Living Room; 6 - Kitchen; 7 - Others]	Optional	int8	Minimum value = 1, Max value = 7
Location Area Others	Description of other location area [Free Text description, mandatory when Others is selected]	Optional	string	loc_area_others = NOT NULL, IF loc_area = 7
Reporter Company Name	Reporter (of safety inspection) company name as in ACRA	Mandatory	string	
Reporter Company UEN	Reporter (of safety inspection) company Unique Entity Number	Mandatory	string	Min characters = 9 Alpha Numerics, Max characters = 10 Alpha Numerics
Reporter Personnel Name	Reporter (of safety inspection) personnel name as in NRIC or FIN	Mandatory	string	
Reporter Personnel Role	Reporter (of safety inspection) role or designation [Selection: 1 - Consultant Project Manager 2 - Contractor Project Manager 3 - Workplace Safety and Health Officer 4 - Workplace Safety and Health Coordinator 5 - Workplace Safety and Health Supervisor 6 - Site Engineer 7 - Site Supervisor 8 - Environmental Control Officer 9 - Resident Technical Officer 10 - Resident Engineer]	Optional	int8	Minimum value = 1, Max value = 10
Inspector Company Name	Inspector (of safety inspection) company name as in ACRA	Mandatory	string	
Inspector Company UEN	Inspector (of safety inspection) company Unique Entity Number	Mandatory	string	Min characters = 9 Alpha Numerics, Max characters = 10 Alpha Numerics

Inspector Personnel Name	Inspector (of safety inspection) personnel name as in NRIC or FIN	Mandatory	string	
Inspector Personnel Role	Inspector (of safety inspection) role or designation [Selection: 1 - Consultant Project Manager 2 - Contractor Project Manager 3 - Workplace Safety and Health Officer 4 - Workplace Safety and Health Coordinator 5 - Workplace Safety and Health Supervisor 6 - Site Engineer 7 - Site Supervisor 8 - Environmental Control Officer 9 - Resident Technical Officer 10 - Resident Engineer]	Optional	int8	Minimum value = 1, Max value = 10
Contractor Company Name	Contractor (of safety inspection) company name as in ACRA	Mandatory	string	
Contractor Company UEN	Contractor (of safety inspection) company Unique Entity Number	Mandatory	string	Min characters = 9 Alpha Numerics, Max characters = 10 Alpha Numerics
Contractor Personnel Name	Contractor (of safety inspection) personnel name as in NRIC or FIN	Optional	string	
Contractor Personnel Role	Contractor (of safety inspection) role or designation [Selection: 1 - Consultant Project Manager 2 - Contractor Project Manager 3 - Workplace Safety and Health Officer 4 - Workplace Safety and Health Coordinator 5 - Workplace Safety and Health Supervisor 6 - Site Engineer 7 - Site Supervisor 8 - Environmental Control Officer 9 - Resident Technical Officer 10 - Resident Engineer]	Optional	int8	Minimum value = 1, Max value = 10

Rectifier Company Name	Rectifier (of safety inspection) company name as in ACRA	Optional	string	rectifier_coy_nm = NOT NULL if no_rectification_performed = True
Rectifier Company UEN	Rectifier (of safety inspection) company Unique Entity Number	Optional	string	Min characters = 9 Alpha Numerics, Max characters = 10 Alpha Numerics
Rectifier Personnel Name	Rectifier (of safety inspection) personnel name as in NRIC or FIN	Optional	string	rectifier_personnel_nm = NOT NULL if no_rectification_performed = True
Rectifier Personnel Role	Rectifier (of safety inspection) role or designation [Selection: 1 - Consultant Project Manager 2 - Contractor Project Manager 3 - Workplace Safety and Health Officer 4 - Workplace Safety and Health Coordinator 5 - Workplace Safety and Health Supervisor 6 - Site Engineer 7 - Site Supervisor 8 - Environmental Control Officer 9 - Resident Technical Officer 10 - Resident Engineer]	Optional	int8	Minimum value = 1, Max value = 10 rectifier_personnel role = NOT NULL if no_rectification_performed = True
Verifier Company Name	Verifier (of safety inspection) company name as in ACRA	Optional	string	verifier_coy_nm = NOT NULL if nc_rectification_performed = True
Verifier Company UEN	Verifier (of safety inspection) company Unique Entity Number	Optional	string	Min characters = 9 Alpha Numerics, Max characters = 10 Alpha Numerics
Verifier Personnel Name	Verifier (of safety inspection) personnel name as in NRIC or FIN	Optional	string	verifier_personnel_nm = NOT NULL if no_rectification_performed = True
Verifier Personnel Role	Verifier (of safety inspection) role or designation [Selection: 1 - Consultant Project Manager	Optional	int8	Minimum value = 1, Max value = 10

	2 - Contractor Project Manager 3 - Workplace Safety and Health Officer 4 - Workplace Safety and Health Coordinator 5 - Workplace Safety and Health Supervisor 6 - Site Engineer 7 - Site Supervisor 8 - Environmental Control Officer 9 - Resident Technical Officer 10 - Resident Engineer]			verifier_personnel_role = NOT NULL if no_rectification_performed = True
Approver Company Name	Approver (of safety inspection) company name as in ACRA	Optional	string	Approver_coy_nm = NOT NULL if nc_rectification_performed = True
Approver Company UEN	Approver (of safety inspection) company Unique Entity Number	Optional	string	Min characters = 9 Alpha Numerics, Max characters = 10 Alpha Numerics
Approver Personnel Name	Approver (of safety inspection) personnel name as in NRIC or FIN	Optional	string	Approver_personnel_nm = NOT NULL if no_rectification_performed = True
Approver Personnel Role	Approver (of safety inspection) role or designation [Selection: 1 - Consultant Project Manager 2 - Contractor Project Manager 3 - Workplace Safety and Health Officer 4 - Workplace Safety and Health Coordinator 5 - Workplace Safety and Health Supervisor 6 - Site Engineer 7 - Site Supervisor 8 - Environmental Control Officer 9 - Resident Technical Officer 10 - Resident Engineer]	Optional	int8	Minimum value = 1, Max value = 10 Approver_personnel_role = NOT NULL if no_rectification_performed = True
Negative Observation Type	Negative Observation Type (required for submission to HDB) [Selection: 1 - Non-Compliance	Optional	int8	Minimum value = 1, Max value = 2

	2 - Near Miss (observation of an unplanned event that did not result in any injury, illness or damage, but had the potential to do so)			
Negative Observation Classification	Classification of negative observation [Selection: 1 - Work-At-Height Provison; 2 - Falling Objects Provison; 3 - Moving Objects Provision; 4 - Housekeeping; 5 - Professional Enginner (PE) Design Provision; 6 - Lifting Operations/Equipment Compliance; 7 - Electrical Appliances/System Compliance; 8 - Fire Extinguisher Provision; 9 - Fire/Explosion and Hotworks Provision; 10 - Traffic/Pedestrian Safety Management; 11 - Site Entry Requirements; 12 - RAs, SWPs or PTWs Compliance; 13 - Personal Protective Equipment (PPE) Provision; 14 - Temporary Structures Provision; 15 - Machinery/Equipment Maintenance and Operations; 16 - Excavation Precaution; 17 - Hazardous Materials Provision; 18 - Environmental and Noise Control Provision; 19 - Confined Space Provision; 20 - Dangerous Operations Provision; 21 - Statutory Licenses and Certificates; 22 - Others.]	Mandatory	int8	Minimum value = 1, Max value = 22
Negative Observation Others Description	Description of negative observation [Free Text description, mandatory when Others is selected]	Optional	string	no_class_desc = NOT NULL, IF nc_class = 22
Negative Observation Severity	Severity level of negative observation [Selection: 1 - Low Risk / Minor;	Mandatory	int8	Minimum value = 1, Max value = 3

	2 - Medium Risk / Major; 3 - High Risk / Critical / Severe]			
Negative Observation Rectification Performed	Was negative observation rectification performed [True = Yes, False = No]	Mandatory	Boolean	
Negative Observation Rectification Date Time	Date and Time when negative observation is rectified	Optional	date-time	2017-07-21T17:32:28Z no_rectification_dt = NOT NULL if no_rectification_performed = True
Negative Observation Photographs Attachment	Supporting photographs of negative observation	Optional	object	
Negative Observation Photographs Attachment for Pre-Rectification	Supporting photographs of negative observation for pre-rectification	Optional	object	
Negative Observation Pre-Rectifications Photographs Attachment	Negative observation pre-rectification photographs attachment [filename with extension, maximum 10 attachments]	Optional	array	Max 10 attachments
Negative Observation Pre-Rectifications Photographs Attachment Content	Negative observation pre-rectification photographs attachment [content stored in an encoded string format, maximum 10 attachments]	Mandatory	string	

Negative Observation Pre-Rectifications Photographs Attachment Filename	Negative observation pre-rectification photographs attachment [file name stored in an encoded string format, maximum 10 attachments]	Mandatory	string	
Negative Observation Photographs Attachment for Post-Rectification	Supporting photographs of negative observation for post-rectification	Optional	object	
Negative Observation Post-Rectifications Photographs Attachment	Negative observation post-rectification photographs attachment [filename with extension, maximum 10 attachments]	Optional	array	Max 10 attachments
Negative Observation Post-Rectifications Photographs Attachment Content	Negative observation post-rectification photographs attachment [content stored in an encoded string format. maximum 10 attachments]	Mandatory	string	
Negative Observation Post-Rectifications Photographs Attachment Filename	Negative observation post-rectification photographs attachment [file name stored in an encoded string format, maximum 10 attachments]	Mandatory	string	

Site Safety Inspection Positive Observation [Pending Updates]

Data Element Name (Data Field)	Definition	Mandatory/ Optional	Data Field Type	Data Validation Rule - Format
Report Identification Number	Report unique serial number generated by site management system	Mandatory	string	
Report Date Time	Report submission date and time	Mandatory	date-time	
Report Revision	Report revision, starting value to be 1 and subsequent revision to be incremental by 1	Mandatory	int8	Minimum value = 1
Safety Inspection Observed Date/Time	Date and time when safety is observed	Mandatory	date-time	YYYYMMDD HH:MM:SS
Safety Inspection Trade	Trade relating to the safety inspection (for HDB), as per HDB reference guide (e.g. A1, B3, C5)	Optional	string	Min characters = 3, Max characters = 4, Range: A.1-A,6, B.1-B.17, C.1-C.15, D.1-D.7
Project Reference Number	Project Building Plan (BP) number issued by URA (e.g. A1234-12345-2022)	Mandatory	string	
Project Name	Project name or development name	Mandatory	string	
Location Gridline	Location (where safety inspection is observed) gridlines as per working drawings	Optional	string	
Location Zone	Location (where safety inspection is observed) zone as per working drawings	Optional	string	
Location Block	Location (where safety inspection is observed) block number	Optional	string	
Location Storey	Location (where safety inspection is observed) storey number	Optional	string	
Location Unit	Location (where safety inspection is observed) unit number	Optional	string	
Location Area	Location (where safety inspection is observed) area [Selection: 1 - Carpark; 2 - Bathroom; 3 - Balcony;	Optional	int8	Minimum value = 1, Max value = 7

	4 - Bedroom; 5 - Living Room; 6 - Kitchen; 7 - Others]			
Location Area Others	Description of other location area [Free Text description, mandatory when Others is selected]	Optional	string	loc_area_others = NOT NULL, IF loc_area = 7
Reporter Company Name	Reporter (of safety inspection) company name as in ACRA	Mandatory	string	
Reporter Company UEN	Reporter (of safety inspection) company Unique Entity Number	Mandatory	string	Min characters = 9 Alpha Numerics, Max characters = 10 Alpha Numerics
Reporter Personnel Name	Reporter (of safety inspection) personnel name as in NRIC or FIN	Mandatory	string	
Reporter Role	Reporter (of safety inspection) role or designation [Selection: 1 - Consultant Project Manager 2 - Contractor Project Manager 3 - Workplace Safety and Health Officer 4 - Workplace Safety and Health Coordinator 5 - Workplace Safety and Health Supervisor 6 - Site Engineer 7 - Site Supervisor 8 - Environmental Control Officer 9 - Resident Technical Officer 10 - Resident Engineer]	Optional	int8	Minimum value = 1, Max value = 10
Inspector Company Name	Inspector (of safety inspection) company name as in ACRA	Mandatory	string	
Inspector Company UEN	Inspector (of safety inspection) company Unique Entity Number	Mandatory	string	Min characters = 9 Alpha Numerics, Max characters = 10 Alpha Numerics
Inspector Personnel Name	Inspector (of safety inspection) personnel name as in NRIC or FIN	Mandatory	string	
Inspector Role	Inspector (of safety inspection) role or designation [Selection: 1 - Consultant Project Manager	Optional	int8	Minimum value = 1, Max value = 10

	2 - Contractor Project Manager 3 - Workplace Safety and Health Officer 4 - Workplace Safety and Health Coordinator 5 - Workplace Safety and Health Supervisor 6 - Site Engineer 7 - Site Supervisor 8 - Environmental Control Officer 9 - Resident Technical Officer 10 - Resident Engineer]			
Contractor Company Name	Contractor (of safety inspection) company name as in ACRA	Mandatory	string	
Contractor Company UEN	Contractor (of safety inspection) company Unique Entity Number	Mandatory	string	Min characters = 9 Alpha Numerics, Max characters = 10 Alpha Numerics
Contractor Personnel Name	Contractor (of safety inspection) personnel name as in NRIC or FIN	Optional	string	
Contractor Personnel Role	Contractor (of safety inspection) personnel role or designation [Selection: 1 - Consultant Project Manager 2 - Contractor Project Manager 3 - Workplace Safety and Health Officer 4 - Workplace Safety and Health Coordinator 5 - Workplace Safety and Health Supervisor 6 - Site Engineer 7 - Site Supervisor 8 - Environmental Control Officer 9 - Resident Technical Officer 10 - Resident Engineer]	Optional	int8	Minimum value = 1, Max value = 10
Positive Observation Classification	Classification of negative observation [Selection: 1 - Work-At-Height Provison; 2 - Falling Objects Provison; 3 - Moving Objects Provision; 4 - Housekeeping;	Mandatory	int8	Minimum value = 1, Max value = 22

	5 - Professional Enginner (PE) Design Provision; 6 - Lifting Operations/Equipment Compliance; 7 - Electrical Appliances/System Compliance; 8 - Fire Extinguisher Provision; 9 - Fire/Explosion and Hotworks Provision; 10 - Traffic/Pedestrian Safety Management; 11 - Site Entry Requirements; 12 - RAs, SWPs or PTWs Compliance; 13 - Personal Protective Equipment (PPE) Provision; 14 - Temporary Structures Provision; 15 - Machinery/Equipment Maintenance and Operations; 16 - Excavation Precaution; 17 - Hazardous Materials Provision; 18 - Environmental and Noise Control Provision; 19 - Confined Space Provision; 20 - Dangerous Operations Provision; 21 - Statutory Licenses and Certificates; 22 - Others]			
Positive Observation Others Description	Description of positive observation [Free Text description, mandatory when Others is selected]	Optional	string	po_class_desc = NOT NULL, IF po_class = 22
Positive Observation Attachment	Supporting photographs of positive observation	Optional	object	
Positive Observation Photographs Attachment	Positive Observation photographs attachment	Optional	array	Max 10 attachments
Positive Observation Photographs	Positive Observation photographs attachment [filename with extension, maximum 10 attachments]	Mandatory	string	

Attachment Filename				
Positive Observation Photographs Attachment Content	Positive Observation photographs attachment [content stored in an encoded string format, maximum 10 attachments]	Mandatory	string	

Appendix C – Construction Productivity Datasets

Manpower Utilisation Data [Updated]

Data Element Name (Data Field)	Definition	Mandatory / Optional	Data Field Type	Data Validation Rule - Format
Submission Entity	Entity of submission by either Onsite Builder or Offsite Fabricator. [Selection: 1 - Onsite Builder; 2 - Offsite Fabricator]	Mandatory	integer	Field length = 1 Minimum value = 1 Maximum value = 2
Submission Month	Submission year and month.	Mandatory	date	Field length = 7 YYYY-MM
Project Reference Number	Project Reference Number (e.g. A1234-12345-2022) (i.e. to populate if "Onsite Builder" is selected for Submission Entity).	Optional	string	Field length = 16 1st character: Alphabet is either A or E 2nd-5th character: Number 6th character: Hyphen 7th-11th character: Alphanumeric 12th character : Hyphen 13th-16th character: Number Mandatory if submission_entity = 1
Project Title	Project Title (e.g. Proposed Construction of 50 Sty Mixed Commercial & Residential Building) (i.e. to populate if "Onsite Builder" is selected for Submission Entity).	Optional	string	Field length = Maximum 1000 Mandatory if submission_entity = 1
Project Location Description	Project Location Description (e.g. 52 Jurong Gateway Road Singapore 608549, MK01 LOT 00001A, Interchange between Jalan Bahar	Optional	string	Field length = Maximum 2000 Mandatory if submission_entity = 1

	and Pioneer Road) (i.e. to populate if "Onsite Builder" is selected for Submission Entity).			
Main Contractor Company Name	Main contractor (onsite builder) company name as in ACRA (i.e. to populate if "Onsite Builder" is selected for Submission Entity).	Optional	string	Mandatory if submission_entity = 1
Main Contractor Company Unique Entity Number	Main contractor (onsite builder) company Unique Entity Number (UEN) as in ACRA (i.e. to populate if "Onsite Builder" is selected for Submission Entity).	Optional	string	Field length = 9-10 Businesses registered with ACRA(1) : NNNNNNNNX Local companies registered with ACRA(1) : YYYYNNNNNX All other entities which will be issued new UEN : TYYPQNNNNX where 'N' = A number 'P' = An alphabetical letter 'Q' = An alpha-numeric digit 'PQ' = Entity Type(2) 'TYY' / 'SYY' / 'YYYY' = Year of issuance(3) 'X' = A check alphabet For example, the UEN for a limited liability partnership (LLP) formed on 1 January 2009 could be 'T09LL0001B' (1) No change from existing ACRA Registration Number (2) E.g. 'LL' = 'Limited Liability Partnership' (3) 'T' represents 20, 'S' represents '19' and 'R' represents '18'. E.g. T08 means year 2008, S99 means year 1999 and R00 means year 1800. Mandatory if submission_entity = 1
Offsite Fabricator Company Name	Offsite fabricator company name as in ACRA (i.e. to populate if "Offsite Fabricator " is selected for Submission Entity).	Optional	string	Mandatory if submission_entity = 2

Offsite Fabricator Company Unique Entity Number	Offsite fabricator company Unique Entity Number (UEN) (i.e. to populate if "Offsite Fabricator" is selected for Submission Entity).	Optional	string	Field length = 9-10 Businesses registered with ACRA(1) : NNNNNNNNX Local companies registered with ACRA(1) : YYYYNNNNNX All other entities which will be issued new UEN : TYYPQNNNNX where 'N' = A number 'P' = An alphabetical letter 'Q' = An alpha-numeric digit 'PQ' = Entity Type(2) 'TYY' / 'SYY' / 'YYYY' = Year of issuance(3) 'X' = A check alphabet For example, the UEN for a limited liability partnership (LLP) formed on 1 January 2009 could be 'T09LL0001B' (1) No change from existing ACRA Registration Number (2) E.g. 'LL' = 'Limited Liability Partnership' (3) 'T' represents 20, 'S' represents '19' and 'R' represents '18'. E.g. T08 means year 2008, S99 means year 1999 and R00 means year 1800. Mandatory if submission_entity = 2
Offsite Fabricator Location Description	Offsite fabricator location description (e.g. 52 Jurong Gateway Road Singapore 608549, MK01 LOT 00001A, Interchange between Jalan Bahar and Pioneer Road) (i.e. to populate if "Offsite Fabricator" is selected for Submission Entity).	Optional	string	Field length = Maximum 2000 Mandatory if submission_entity = 2
Person Identity Number	Person identification as in full Unique Identification Number (UIN), i.e. National Registration Identity Card (NRIC) or Foreign Identification Number (FIN).	Mandatory	string	Field length = 9 UIN validation: Structure:- ANNNNNNNC

				(i) A is the century prefix as follows:- For year of birth 1900-1999: 'S'. For year of birth 2000-2099: 'T'. (ii) NNNNNNN is a seven-digit assigned number. (iii) C is the check digit. FIN validation: Structure:- ANNNNNNNC (i) A is the century prefix as follows:- For year 1900-1999: 'F'. For year 2000-2021: 'G'. For year 2022 onwards: 'M'. (ii) NNNNNNN is an assigned number. (iii) C is the check digit.
Person ID And Work Pass Type	Identification and work pass type of Person. [Selection: SP - Singapore Pink Identification Card; SB - Singapore Blue Identification Card; EP - Employment Pass; SPASS - S Pass; WP - Work Permit Holder; ENTREPASS - EntrePass; LTVP - Long-Term Visit Pass]	Mandatory	string	Field length = Maximum 9
Person Trade (See Detailed Trade Mapping in Appendix C)	Person trade. [Selection: 1.1 - Site Management (Ancillary Works); 1.2 - Site Support (Ancillary Works); 1.3 - General Machine Operation (Ancillary Works); 1.4 - Site Preparation (Ancillary Works); 1.5 - Scaffolding (Ancillary Works); 2.1 - Demolition (Civil & Structural Works); 2.2 - Earthworks (Civil & Structural Works); 2.3 - Foundation (Civil & Structural Works);	Mandatory	string	Field length = 3-4 Allowable Range: 1.1-1.5; 2.1-2.8; 3.1-3.11, 4.1-4.6

	2.4 - Tunnelling (Civil & Structural Works); 2.5 - Reinforced Concrete (Civil & Structural Works); 2.6 - Structural Steel (Civil & Structural Works); 2.7 - Mass Engineered Timber (Civil & Structural Works); 2.8 - Road & Drainage (Civil & Structural Works); 3.1 - Ceiling (Architectural Works); 3.2 - Partition Wall (Architectural Works); 3.3 - Floor (Architectural Works); 3.4 - Roofing (Architectural Works); 3.5 - Facade (Architectural Works); 3.6 - Door (Architectural Works); 3.7 - Window (Architectural Works); 3.8 - Finishes (Architectural Works); 3.9 - Waterproofing (Architectural Works); 3.10 - Joinery & Fixtures Installation (Architectural Works); 3.11 - Landscaping (Architectural Works); 4.1 - Plumbing, Sanitary & Gas (Service Works); 4.2 - Fire Prevention & Protection (Service Works); 4.3 - Electrical (Service Works); 4.4 - Mechanical (Service Works); 4.5 - Lift & Escalator (Service Works); 4.6 - Prefab MEP (Service Works)]			
Person Employer Company Name	Company (that employ the person) name as in ACRA.	Mandatory	string	

Person Employer Company Unique Entity Number	Company (that employ the person) Unique Entity Number (UEN).	Mandatory	string	Field length = 9-10 Businesses registered with ACRA(1) : NNNNNNNNX Local companies registered with ACRA(1) : YYYYNNNNNX All other entities which will be issued new UEN : TYYPQNNNNX where 'N' = A number 'P' = An alphabetical letter 'Q' = An alpha-numeric digit 'PQ' = Entity Type(2) 'TYY' / 'SYY' / 'YYYY' = Year of issuance(3) 'X' = A check alphabet For example, the UEN for a limited liability partnership (LLP) formed on 1 January 2009 could be 'T09LL0001B' (1) No change from existing ACRA Registration Number (2) E.g. 'LL' = 'Limited Liability Partnership' (3) 'T' represents 20, 'S' represents '19' and 'R' represents '18'. E.g. T08 means year 2008, S99 means year 1999 and R00 means year 1800.
Person Employer Company Trade (See Detailed Trade Mapping in Appendix C)	Trade that the person employer company performs (i.e. multiple entries are allowed, values to be separated by comma e.g. 1.1, 2.2,3.1,4.4). [Selection: 1.1 - Site Management (Ancillary Works); 1.2 - Site Support (Ancillary Works); 1.3 - General Machine Operation (Ancillary Works); 1.4 - Site Preparation (Ancillary Works); 1.5 - Scaffolding (Ancillary Works); 2.1 - Demolition (Civil & Structural Works); 2.2 - Earthworks (Civil & Structural Works);	Mandatory	string	Multiple entries e.g. 1.1,2.2,3.1,4.4 Allowable Range: Allowable Range: 1.1-1.5; 2.1-2.8; 3.1-3.11, 4.1-4.6

	2.3 - Foundation (Civil & Structural Works); 2.4 - Tunnelling (Civil & Structural Works); 2.5 - Reinforced Concrete (Civil & Structural Works); 2.6 - Structural Steel (Civil & Structural Works); 2.7 - Mass Engineered Timber (Civil & Structural Works); 2.8 - Road & Drainage (Civil & Structural Works); 3.1 - Ceiling (Architectural Works); 3.2 - Partition Wall (Architectural Works); 3.3 - Floor (Architectural Works); 3.4 - Roofing (Architectural Works); 3.5 - Facade (Architectural Works); 3.6 - Door (Architectural Works); 3.7 - Window (Architectural Works); 3.8 - Finishes (Architectural Works); 3.9 - Waterproofing (Architectural Works); 3.10 - Joinery & Fixtures Installation (Architectural Works); 3.11 - Landscaping (Architectural Works); 4.1 - Plumbing, Sanitary & Gas (Service Works); 4.2 - Fire Prevention & Protection (Service Works); 4.3 - Electrical (Service Works); 4.4 - Mechanical (Service Works); 4.5 - Lift & Escalator (Service Works); 4.6 - Prefab MEP (Service Works)]			
Person Employer Client Company Name	Company (client of person employer) name as in ACRA.	Mandatory	string	

Person Employer Client Company Unique Entity Number	Company (client of person employer) Unique Entity Number (UEN).	Mandatory	string	Field length = 9-10 Businesses registered with ACRA(1) : NNNNNNNNX Local companies registered with ACRA(1) : YYYYNNNNNX All other entities which will be issued new UEN : TYYPQNNNNX where 'N' = A number 'P' = An alphabetical letter 'Q' = An alpha-numeric digit 'PQ' = Entity Type(2) 'TYY' / 'SYY' / 'YYYY' = Year of issuance(3) 'X' = A check alphabet For example, the UEN for a limited liability partnership (LLP) formed on 1 January 2009 could be 'T09LL0001B' (1) No change from existing ACRA Registration Number (2) E.g. 'LL' = 'Limited Liability Partnership' (3) 'T' represents 20, 'S' represents '19' and 'R' represents '18'. E.g. T08 means year 2008, S99 means year 1999 and R00 means year 1800.
Person Attendance Date	Date (i.e. time-in date, as per Singapore time zone UTC+8) that the person is at onsite project or offsite fabricator.	Mandatory	date	Field length = 10 YYYY-MM-DD (date as in UTC+8)
Person Attendance Details	Details of person attendance at onsite project or offsite Fabricator. A person attendance for time-in on day 1 and time-out the following day, will be counted towards day 1 (e.g. time-in on 30 April 2025 2300Hrs and time-out on 1 May 2025 0700Hrs, the attendance is counted towards 30 April 2025).	Mandatory	array	SUM of total duration (i.e. time_out - time_in) =< 24 Hours

Time In	Person time-in (of a corresponding pair of time-in and time-out) at onsite project or offsite fabricator.	Mandatory	datetime	Field length = 25 YYYY-MM-DD[T]hh:mm:ss+hh:mm e.g. 2015-01-01T12:00:00+08:00 for UTC +8 time_in and person_attendance_date must be same date
Time Out	Person time-out (of a corresponding pair of time-in and time-out) at onsite project or offsite fabricator.	Mandatory	datetime	Field length = 25 YYYY-MM-DD[T]hh:mm:ss+hh:mm e.g. 2015-01-01T12:00:00+08:00 for UTC +8 time_out must be later than time_in time_out and time_in must be same date or time-out is 1 day later than time_in

Revised and Streamlined Trade List [Updated]

Trade Code	Trade (Trade Category)	Trade Inclusions (For info only, non-exhaustive)
1.1	Site Management (Ancillary Works)	Project Management
		Quality Assurance / Quality Check
		Road and Traffic Management
		Workplace Safety and Health
		Site Inspection
1.2	Site Support (Ancillary Works)	Technical Team (e.g. BIM Modeller, drafter)
		Quantity Surveyor
		Security Guard
		Housekeeping & General Maintenance
1.3	General Machine Operation (Ancillary Works)	Crawler Crane Operation
		Mobile Crane (Truck Mounted) Operation
		Tower Crane Operation (Luffing Jib)
		Tower Crane Operation (Saddle Jib)
		Mini Crane Operation
		Telescopic Handler Operation
		Wheel Shovel Operation
		Remote or Autonomous Machine Operation
		Hydraulic Excavator Operation (as Lifting Machine)

		Excavator Loader Operation
		Hydraulic Excavator Operation
		Marine Dredging Plant Operation
		Bulldozer Operation
		Track Shovel Operation
		Passenger Hoist Operation
		Mast Climbing Platform
1.4	Site Preparation (Ancillary Works)	Site Clearance
		Surveying
		Site Investigation
		Soil Investigation
		Soil Drilling and Instrumentation
		Instrumentation and Monitoring
1.5	Scaffolding (Ancillary Works)	Metal Scaffold Erection (System Scaffold)
		Metal Scaffold Erection
		Metal Scaffold Erection (Tubular Scaffold)
		Suspended Scaffold (Gondola)
2.1	Demolition (Civil & Structural Works)	
2.2	Earthworks (Civil & Structural Works)	Ground Support & Stabilisation

		Ground Improvement
		Deep Cement Mixing Operation
		Propping
		Ground Freezing
		Vertical Elements (e.g. King Posts, Decking)
		Under-pinning
		Earth Retaining Structures (e.g. diaphragm wall, CBP, SBP, Temporary Strutting, Sheet Piling)
2.3	Foundation (Civil & Structural Works)	Deep Foundation (e.g. Piling)
		Shallow Foundation (e.g. Raft, Strip, Pad)
		Bored Micro-Piling Operation
		Bored Piling Operation
		Driven Piling Operation
		Jack-In Piling Operation
		Jet Grout Piling Operation
		Marine Driven Piling Operation
		Marine Sand Compaction Piling Operation
		Crawler Drill Operation
2.4	Tunnelling (Civil & Structural Works)	Tunnel Boring Machine (Earth Pressure Method)

		Tunnel Boring Machine (Slurry Method)
		Underground Pipe-Jacking
		Trenchless Pipe Installation (Pipe Services)
		Trenchless Pipe Installation (Power and Fibre Optics Cable Services)
		Utilities Detection & Diversion
2.5	Reinforced Concrete (Civil & Structural Works)	Aluminium Formwork
		Steel Reinforcement Work
		Timber Formwork
		Concreting
		Drain laying
		Guniting
		Pre-stressing & post-tensioning
		Metal Formwork
		Enhanced Aluminium Formwork
		Enhanced System Formwork
		Enhanced Timber Formwork
		Plastic Formwork
		System Formwork Installation
		Precast Concrete Production

		Automated Precast Concrete Production
		Precast Concrete Component Erection
		Precast Concrete Component Erection (with tower crane hoist)
2.6	Structural Steel (Civil & Structural Works)	Structural Steel Fitting
		Welding
		Corrosion Protection System
		Bolting
2.7	Mass Engineered Timber (Civil & Structural Works)	Cross Laminated Timber
		Glued Laminated Timber
2.8	Road & Drainage (Civil & Structural Works)	Asphalt Works & Road Marking
		Pavement Slab and Kerb Construction
		Interlocking Blocks Pavement Construction
		Road Base
		Road Furniture & Signage
		Precast Kerb and Drain Laying
3.1	Ceiling (Architectural Works)	Suspended Ceiling Installation (Fibrous Plaster)
		Suspended Ceiling Installation (Acoustical)
3.2	Partition Wall (Architectural Works)	Interior Drywall Installation
		Precision Blocklaying and Wall Panel Installation

		Precast Concrete Panel Installation
		Autoclaved Aerated Concrete (AAC) Precision Blocklaying
		Bricklaying
3.3	Floor (Architectural Works)	Raised Floor
3.4	Roofing (Architectural Works)	Metal Roofing
		Clay Roof Tiling
3.5	Façade (Architectural Works)	Cladding Installation
		Curtain Wall Installation
3.6	Door (Architectural Works)	Doors Installation (Aluminium)
		Doors Installation (Timber)
3.7	Window (Architectural Works)	Windows Installation (Aluminium)
		Windows Installation (Timber)
		Glazing
3.8	Finishes (Architectural Works)	Carpet
		Vinyl
		Laminate
		Tiling
		Timber Flooring
		Stone Laying

		Screeding and Hardening
		Epoxy Finishing
		Painting
		Plastering
		Panelling
		Blasting and Metal Spray Painting
3.9	Waterproofing (Architectural Works)	
3.10	Joinery & Fixtures (Architectural Works)	Carpentry
		Signage Installation
		Fencing & Ironworks
		Railing Installation
3.11	Landscaping (Architectural Works)	Hardscape (e.g. Playground)
		Softscape (e.g. Planting, turfing)
4.1	Plumbing, & Sanitary & Gas (Service Works)	Gas Pipefitting
		Interior Gas Pipefitting
		Plumbing
		Thermal Insulation
		Pipe Fitting
4.2	Fire Prevention & Protection (Service Works)	Sprayed mineral fire protection

		Deluged System
		Fire Suppression System
		Smoke Control System
		Dry & Wet riser Installation
		Fire Stopping
		Fire Sprinkler Installation
4.3	Electrical (Service Works)	Electrical Wiring Installation
		Lighting Installation
		Cable TV Wiring Installation
		Fibre Optics Installation
		Security Systems Installation
		Electrical Vehicle Charging Installation
		Building Management Systems Installation
		Communication & Security Systems
		Lightning Protection system
		Building Automation, Industrial & Process Control Systems
		Wiring for Telecommunications
		Solar PV System Integration
4.4	Mechanical (Service Works)	ACMV/HVAC Systems

		Refrigeration Works
		Swimming Pool Installation
		MCPS Installation
		Thermal Insulation
		Pneumatic Waste Conveyance System (PWCS)
4.5	Lift & Escalator (Service Works)	Lift Installation
		Escalator Installation
		Travellator Installation
4.6	Prefab MEP (Service Works)	Prefab MEP module frame assembly
		Prefab MEP module frame installation

Manpower Distribution Data [Updated]

Data Element Name (Data Field)	Definition	Mandatory / Optional	Data Field Type	Data Validation Rule - Format
Submission Month	Submission year and month	Mandatory	datetime	Field length = 7 YYYY-MM
Offsite Fabricator Company Name	Offsite fabricator company name as in ACRA	Mandatory	string	
Offsite Fabricator Unique Entity Number	Offsite fabricator company Unique Entity Number (UEN)	Mandatory	string	Field length = 9-10 Businesses registered with ACRA(1) : NNNNNNNNX Local companies registered with ACRA(1) : YYYYNNNNNX All other entities which will be issued new UEN : TYYPQNNNNX where 'N' = A number 'P' = An alphabetical letter 'Q' = An alpha-numeric digit 'PQ' = Entity Type(2) 'TYY' / 'SYY' / 'YYYY' = Year of issuance(3) 'X' = A check alphabet For example, the UEN for a limited liability partnership (LLP) formed on 1 January 2009 could be 'T09LL0001B' (1) No change from existing ACRA Registration Number (2) E.g. 'LL' = 'Limited Liability Partnership' (3) 'T' represents 20, 'S' represents '19' and 'R' represents '18'. E.g. T08 means year 2008, S99 means year 1999 and R00 means year 1800.
Offsite Fabricator Location Description	Offsite fabricator location description (e.g. 52 Jurong Gateway Road Singapore 608549,	Mandatory	string	Field length = Maximum 2000

	MK01 LOT 00001A, Interchange between Jalan Bahar and Pioneer Road)			
Manpower Distribution Storage Ratio	Ratio of manhours against total manhours that is used to produce/fabricate Precast Concrete, Prefabricated Mechanical, Electrical & Plumbing and/or Structural Steel for storage (not used for any project), in percentage	Mandatory	integer	Field length = Maximum 3 Minimum value = 0 Maximum value = 100 Sum of all ratio = 100
Manpower Distribution Client Details	Details of manpower distribution to client projects	Mandatory	array	
Project Reference Number	Client's project reference number (e.g. A1234-12345-2022)	Mandatory	string	Field length = 16 1st character: Alphabet is either A or E 2nd-5th character: Number 6th character: Hyphen 7th-11th character: Alphanumeric 12th character : Hyphen 13th-16th character: Number
Project Title	Client project title (e.g. Proposed Construction of 50 Sty Mixed Commercial & Residential Building)	Mandatory	string	Field length = Maximum 1000
Project Location Description	Client's project location description (e.g. 52 Jurong Gateway Road Singapore 608549, MK01 LOT 00001A, Interchange between Jalan Bahar and Pioneer Road)	Optional	string	Field length = Maximum 2000
Fabrication Start Month	Actual year and month when fabrication/production for the client's project commenced	Mandatory	datetime	Field length = 7 YYYY-MM
Fabrication Complete Month	Projected/Actual year and month when fabrication/production for the client's project completes and submission for the project will cease thereafter	Mandatory	datetime	Field length = 7 YYYY-MM

Manpower Ratio	Ratio of manhours against total manhours that is used to produce/fabricate Precast Concrete, Prefabricated Mechanical, Electrical & Plumbing and/or Structural Steel for client project, in percentage	Mandatory	integer	Field length = Maximum 3 Minimum value = 0 Maximum value = 100 Sum of all ratio = 100