

# Schedule

CAST Laboratories Pte Ltd  
17 Tuas Ave 8  
Singapore 639232

Certificate No. : LA-2000-0182-G  
Issue No. : 21  
Date : 15 December 2023  
Expiry of Certificate : 22 January 2028  
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FIELD OF TESTING: Mechanical Testing

MATERIALS / PRODUCTS TESTED	TEST / PROPERTIES	STANDARD METHODS / TECHNIQUES	APPROVED SIGNATORY
A. Metallic Materials / Metals	1. Tensile Test	JIS Z 2241: 2022 ASTM A370 :2022 BS EN ISO 6892:1: 2019 BS EN ISO 4136: 2022 ASME IX : 2021(Article 1) AWS D1.1/D1.1M: 2020	TBH/BL
	2 Bend Test	ASTM A370 : 2021 ASME IX : 2021(Article 1) AWS D1.1/D1.1M: 2020 BS EN ISO 5173: 2023	TBH/BL
	3 Macro-etching metals & alloys macroscopic examination on welds	ASME IX : 2021(Article 1) AWS D1.1/D1.1M: 2020 BS EN ISO 17639: 2022 ASTM E340 : 2015 ASTM E381 : 2022	TBH/BL
	4 Hardness Test (i) Vickers Hardness Test	ASTM E92 : 2023 BS EN ISO 6507-1: 2018 BS EN ISO 9015-1: 2011	TBH/BL
	(ii) Rockwell Hardness ("B" & "C") Test	BS EN ISO 6508-1: 2016 ASTM E18: 2022	TBH/BL
	5 V Notch Charpy Impact	ASTM A370 : 2022 ASTM E23 : 2023 BS EN ISO 148-1: 2016	TBH/BL
6 Fracture Test	ASME IX : 2021 AWS D1.1/D1.1M: 2020 BS EN ISO 9017: 2018	TBH/BL	

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B. Steel Reinforcement Bar	1. Tensile test 2. Bend test 3. Rebend test	SS 2 : pt 1 :1999 SS 2 : pt 2 :1999 SS 2 : pt 3 : 1987 BS 4449: 2005 +A3: 2016 BS EN ISO 6892:1: 2019 BS EN ISO 15630-1: 2019 SS 560: 2016	TBH/BL
	4. Dimensional Measurement / Surface geometry	BS 4449: 2005 +A3: 2016 SS 560: 2016 BS EN ISO 15630-1: 2019	TBH/BL
C. Welded Steel Fabric	1. Tensile test 2. Bend test 3. Rebend test 4. Reverse bend test 5. Weld shear test 6. Strength of joint For welded Fabric	SS 18: pt1: 1999 SS 18: pt2: 1970 (1981) SS 32: pt 1: 1999 SS 32: pt 2: 1986 SS 561: 2022+A2:2022 BS EN ISO 15630-1: 2019 BS EN ISO 15630-2: 2019 BS EN ISO 6892-1: 2019	TBH/BL
D. Seven wire prestressing strand/ high tensile steel wire/prestressing Steel	1. Tensile test (Breaking load)	BS 5896: 2012 ASTM A416/416M : 2018 (exclude Table 2 - Yield Strength) SS 475:pt 1 & 4: 2000 BS EN ISO 6892-1: 2019 BS EN ISO 15630-3: 2019	TBH/BL
	1. Tensile Strength	BS 5896: 2012 BS EN ISO 15630-3: 2019 BS EN ISO 6892-1: 2019 ASTM A416/A416M: 2018	TBH/BL
E. Reinforcement steel bar with coupler	1. Tensile Load & Permanent Set	MEC-S029-RO: Jan17 (BS 8110-1: 1997) BS EN 1992-1-1:2004+A1:2014	TBH/BL
	2. Tensile Test & Slip Test (Permanent Elongation)	ISO 15835-2: 2018	TBH/BL
F. Bolts	1. Tensile Test Full Size Bolts	BS EN ISO 898 - 1 : 2013 (Clause 9.2)	TBH/BL
	2. Single Shear Test	ASTM F606/F606M –2021 CL 3.8	TBH/BL

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G. Nuts	1. Proof Load	BS EN ISO 898 - 2 : 2022 BS 3692 : 2014 BS 4190 : 2014	TBH/BL
H. Fiber reinforcement polymer matrix composite bars / GFRP bar	1. Tensile test	In-house Developed Procedure MEC-S031-R1-May18	TBH/BL
I. Metal formwork	1. Tensile test 2. Dimension test	JIS Z 2241 : 2022 In-house Developed Procedure MEC-S032-R0-Mar18	BL/TBH

## Approved signatories

Mr Tee Boon Huat For all tests

Mr Benedict Lim For all tests

## Note:

(Note- to be revised by SAC Secretariat)

This laboratory is accredited in accordance with the recognised International Standard ISO/IEC 17025:2005. A laboratory's fulfilment of the requirements of ISO/IEC 17025:2005 means the laboratory meets both the technical competence requirements and **management system requirements** that are necessary for it to consistently deliver technically valid test results. The **management system requirements** in ISO/IEC 17025:2005 (Section 4) are written in language relevant to laboratory operations and meet the principles of ISO 9001:2008 **Quality Management Systems — Requirements** and are aligned with its pertinent requirements.