

(Garuda)

Certificate No.19T035/0812

## Certificate of Laboratory Accreditation

By Virtue of National Standardization Act B.E. 2551 (2008)

Secretary-General, Thai Industrial Standards Institute

Issues this Certificate to

**Dextra Manufacturing Company Limited**

Laboratory address:

128 Soi Chaloem Phra Kiat Ro 9, Soi 48, Dok Mai, Prawet, Bangkok

This laboratory is accredited for testing  
in accordance with the Thai Industrial Standard TIS 17025-2548 (2005) (ISO/IEC 17025:2005)  
General Requirements for the Competence of Testing and Calibration Laboratories

**Accreditation No. TESTING 0428**

The scope of accreditation is as annexed hereto.

Valid from 11<sup>th</sup> February B.E. 2562 (2019)

Valid until 10<sup>th</sup> February B.E. 2565 (2022)

Issue date 25<sup>th</sup> March B.E. 2562 (2019)

Translation approved



(Mrs. Sutavadee Techajunta)

Director

Office of the National Standardization Council

Date 26<sup>th</sup> April 2019

(Signature)

(Mr. Wanchai Phanomchai)

Secretary-General

Thai Industrial Standards Institute



Ministry of Industry, Thai Industrial Standards Institute

Translation Note: In the event of doubt or misunderstanding, the original in Thai shall be the authoritative.

# Scope of Accreditation for Testing

Certificate No. 19T035/0812

Laboratory name      Dextra Manufacturing Company Limited  
 Address                128 Soi Chaloem Phra Kiat Ro 9, Soi 48, Dok Mai, Prawet, Bangkok  
 Accreditation No.    TESTING 0428  
 Laboratory Status    ☒ Permanent   ☐ Site   ☐ Temporary   ☐ Mobile

Field of Test	Specific Test	Test Method
Civil field		
1. Steel bars for reinforced concrete : deformed bars	- Tensile strength - Yield strength - Elongation Load 1 kN to 2 000 kN	- TIS 24-2559 (2016)
2. Steel reinforcing bars	- Tensile strength - Yield Strength - Elongation - 0.2 % Proof strength Load 1 kN to 2 000 kN	- ASTM A370-14
	- Tensile strength - Yield Strength - Elongation - 0.2 % Proof strength - Percentage total elongation at maximum force (Agt.) Load 1 kN to 2 000 kN	- ISO 15630-1:2010
3. Mechanical splice	- Tensile strength Load 1 kN to 2 000 kN	- ASTM A1034/A1034M-10a - California test 670, December 2013
	- Tensile strength - Percentage total elongation at maximum force (Agt.) Load 1 kN to 2 000 kN	- ISO 15835-2:2009 - ISO 15835-2:2018 - NF A35-020-2-1, 25 November 2017 - BS 8597:2015 - ISO 15630-1:2010 - JGJ 107:2016 - JSCE:2007 - IS 16172:2014

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Field of Test	Specific Test	Test Method
Civil field 3. Mechanical splice (cont.)	<ul style="list-style-type: none"> <li>- Stiffness value Load 1 kN to 2 000 kN</li> <li>- Strain value Load 1 kN to 2 000 kN</li> <li>- Tensile test at low temperature of (-7°C) or less Load 1 kN to 2 000 kN</li> <li>- Slip in tension test Load 1 kN to 2 000 kN</li> <li>- Slip in compression test Load 1 kN to 2 000 kN</li> <li>- Permanent deformation after loading Load 1 kN to 2 000 kN</li> </ul>	<ul style="list-style-type: none"> <li>- JSCE:2007</li> <li>- ACI 349-13 clause 12.14.3.7</li> <li>- Sellafield Technical Standard ES_0_3110_2 – Issue 3</li> <li>- ASME BPVC Sec III Div 2 (2013) CC-3530</li> <li>- ASME BPVC Sec III Div 2 (2013) clause CC-4333.2.3 (a)</li> <li>- Sellafield Technical Standard ES_0_3110_2 – Issue 3</li> <li>- ASTM A1034/A1034M-10a</li> <li>- ISO 15835-2:2009</li> <li>- ISO 15835-2:2018</li> <li>- California test 670, December 2013</li> <li>- BS 8597:2015</li> <li>- JGJ 107:2016</li> <li>- JSCE:2007</li> <li>- IS 16172:2014</li> <li>- BS 8597:2015</li> <li>- NF A35-020-2-1, 25 November 2017</li> </ul>

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Field of Test	Specific Test	Test Method
Civil field 3. Mechanical splice (cont.)	<ul style="list-style-type: none"> <li>- Static compression test Load 1 kN to 2 000 kN</li> <li>- Static tension test Load 1 kN to 2 000 kN</li> <li>- Cyclic tension test Load 1 kN to 2 000 kN</li> <li>- Cyclic tension and compression test Load 1 kN to 1 000 kN</li> <li>- Low cyclic loading test Load 1 kN to 1 000 kN</li> <li>- Low cyclic loading test: Alternating tension and compression of high stress (S1) Load 1 kN to 1 000 kN</li> <li>- Low cyclic loading test: Alternating tension and compression of large strain (S2) Load 1 kN to 1 000 kN</li> <li>- Oligocyclic test Load 1 kN to 1 000 kN</li> </ul>	<ul style="list-style-type: none"> <li>- ICC Evaluation service AC133 approved October 2015</li> <li>- ICC Evaluation service AC133 approved October 2015</li> <li>- Sellafield Technical Standard ES_0_3110_2 – Issue 3</li> <li>- ASME BPVC Sec III Div 2 (2013) clause CC-4333.2.3 (b)</li> <li>- IS 16172:2014</li> <li>- California test 670, December 2013</li> <li>- ICC Evaluation service AC133 approved October 2015</li> <li>- ISO 15835-2:2018</li> <li>- ISO 15835-2:2009</li> <li>- JGJ 107:2016</li> <li>- JSCE:2007</li> <li>- ISO 15835-2:2009</li> <li>- JGJ 107:2016</li> <li>- JSCE:2007</li> <li>- NF A35-020-2-1, 25 November 2017</li> </ul>

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Field of Test	Specific Test	Test Method
Civil field		
4. Mechanical anchorage	<ul style="list-style-type: none"> <li>- Static loading test Load 1 kN to 2 000 kN</li> <li>- Wedge tensile test Load 1 kN to 2 000 kN</li> <li>- Tensile test Load 1 kN to 2 000 kN</li> <li>- Permanent deformation after loading Load 1 kN to 2 000 kN</li> <li>- Oligocyclic test Load 1 kN to 1 000 kN</li> <li>- Cyclic tension test Load 1 kN to 2 000 kN</li> <li>- Head rigidity test Load 1 kN to 2 000 kN</li> </ul>	<ul style="list-style-type: none"> <li>- ISO 15698-2:2012</li> <li>- ISO 15698-2:2012</li> <li>- NF A35-020-2-2, 25 November 2017</li> <li>- NF A35-020-2-2, 25 November 2017</li> <li>- NF A35-020-2-2, 25 November 2017</li> <li>- ICC Evaluation service AC347 approved January 2013</li> <li>- ICC Evaluation service AC347 approved January 2013</li> </ul>
5. Round bars	<ul style="list-style-type: none"> <li>- Tensile strength</li> <li>- Yield strength</li> <li>- Elongation</li> <li>- Reduction of area Load 1 kN to 2 000 kN</li> </ul>	<ul style="list-style-type: none"> <li>- ASTM A370-14</li> <li>- ASTM E8/E8M-16a</li> <li>- BS EN 10002-1:2001</li> <li>- ISO 6892-1:2016</li> <li>- JIS Z 2241:2011</li> </ul>

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Field of Test	Specific Test	Test Method
Civil field 6. Tubular bars	- Tensile strength - Yield strength - Elongation Load 1 kN to 2 000 kN	- ASTM A370-14 - ASTM E8/E8M-16a - BS EN 10002-1:2001 - ISO 6892-1:2016 - JIS Z 2241:2011
7. Metallic materials	Hardness test - HRB - HRC	- ASTM E18-18a - JIS Z 2245:2016 - ISO 6508-1:2016

Issue date 25<sup>th</sup> March B.E. 2562 (2019)

(Signature)

(Mr. Wanchai Phanomchai)

Secretary-General

Thai Industrial Standards Institute