



Ref. No : 07T050/0577

## CERTIFICATE OF LABORATORY ACCREDITATION

This is to certify that

Testing Laboratory

LPN Plate Mill Public Company Limited

199/9 Moo 4, Suksawad, Pakklongbangplakod, Prasamutjadee, Samutprakarn

has successfully undergone assessment under  
the Thai Laboratory Accreditation Scheme (TLAS)

Thai Industrial Standards Institute

for meeting its criteria of competence, which are in accordance with  
General requirements for the competence of testing and calibration laboratories

TIS 17025 - 2548 (2005)

ISO/IEC 17025 : 2005

Accreditation No. TESTING 0158

The scope of accreditation is as annexed hereto.

Date of Issue : 30<sup>th</sup> May 2007

Valid until : 8<sup>th</sup> December 2008

Signature :

(Issra Shoatburakarn)

Deputy Permanent Secretary for Industry  
Chairman, Ministerial Cluster  
for Industrial and Entrepreneurial Promotion  
Chairman of Industrial Product Standards Council

Initial Date of Issue : 9<sup>th</sup> December 2005

Thai Laboratory Accreditation Scheme, Thai Industrial Standards Institute, Ministry of Industry

## Scope of Accreditation for Testing

Laboratory Name : Testing Laboratory

LPN Plate Mill Public Company Limited

Premises : 199/9 Moo 4, Suksawad, Pakklongbangplakod, Prasamutjadee, Samutprakarn

Accreditation No. : TESTING 0158

Laboratory Status :  Permanent  Site  Temporary  Mobile

Item/Product Tested	Specific Test/ Range of Measurement	Standard/Test Method/ Technique Used
1. Carbon steel and low-alloy steel	Chemical testing - Carbon 0.015 to 1.030 % by weight - Silicon 0.008 to 0.740 % by weight - Manganese 0.022 to 2.000 % by weight - Phosphorous 0.005 to 0.044 % by weight - Sulfur 0.002 to 0.039 % by weight - Chromium 0.007 to 1.480 % by weight - Molybdenum 0.004 to 0.500 % by weight - Aluminium 0.004 to 0.075 % by weight - Tin 0.002 to 0.045 % by weight	- ASTM E 415-99 a

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Accreditation No. : TESTING 0158

Laboratory Status :  Permanent  Site  Temporary  Mobile

Item/Product Tested	Specific Test/ Range of Measurement	Standard/Test Method/ Technique Used
1. Carbon steel and low-alloy steel (cont.)	Chemical testing (cont.) - Copper 0.015 to 0.500 % by weight - Nickel 0.021 to 1.990 % by weight - Niobium 0.010 to 0.070 % by weight - Titanium 0.006 to 0.200 % by weight - Vanadium 0.004 to 0.300 % by weight	- ASTM E 415-99 a
2. Iron and steel	Mechanical testing - Tension test <ul style="list-style-type: none"> <li>● Yield strength</li> <li>● Tensile strength</li> <li>● Elongation</li> </ul> Load 7.85 kN to 784.80 kN	- ASTM E 8M-04 - ASTM A370-03a - JIS Z 2241:1998 - ISO 6892:1998 - BS EN 10002-1:2001 (Yield strength determined by autographic diagram method)

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Accreditation No. : TESTING 0158

Laboratory Status :  Permanent  Site  Temporary  Mobile

Item/Product Tested	Specific Test/ Range of Measurement	Standard/Test Method/ Technique Used
2. Iron and steel (cont.)	Mechanical testing (cont.) <ul style="list-style-type: none"> <li>- Bend test                             <ul style="list-style-type: none"> <li>• Bend 180 degree</li> <li style="padding-left: 40px;">Mandrel size 6, 8, 9, 10, 18, 21, 24, 36, 38.1, 40, 48, 50, 50.8, 60, 63.5 and 70 mm</li> </ul> </li> <li>- Impact test                             <ul style="list-style-type: none"> <li>• Charpy V notch</li> <li style="padding-left: 40px;">Energy 6.25 J to 325.00 J</li> <li style="padding-left: 40px;">At temperature</li> <li style="padding-left: 60px;">- 50 °C to 30 °C</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- ASTM A 370-03a and ASTM E 290-97a</li> <li>- JIS Z 2248-1996</li> <li>- ASTM A 370-03a</li> <li>- ASTM E 23-02a</li> </ul>
3. Weld specimen in iron and steel product	Mechanical testing <ul style="list-style-type: none"> <li>- Tension test                             <ul style="list-style-type: none"> <li>• Yield strength</li> <li>• Tensile strength</li> <li>• Elongation</li> <li style="padding-left: 40px;">Load 7.85 kN to 784.80 kN</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- ASTM A 370-03a (Test specimens preparation according to ASME section IX, 2004 edition July 1, 2004)</li> <li>- AWS D1.1/D1.1 M:2004</li> <li>- ANSI/AASHTO/AWS D1.5-96 (Yield strength determined by autographic diagram method)</li> </ul>

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Accreditation No. : TESTING 0158

Laboratory Status :  Permanent  Site  Temporary  Mobile

Item/Product Tested	Specific Test/ Range of Measurement	Standard/Test Method/ Technique Used
3. Weld specimen in iron and steel product (cont.)	Mechanical testing (cont.) - Bend test <ul style="list-style-type: none"> <li>• Bend 180 degree Mandrel size 6, 8, 9, 10, 18, 21, 24, 36, 38.1, 40, 48, 50, 50.8, 60, 63.5 and 70 mm</li> </ul>	- ASTM A 370-03a and ASTM E 190-92 (Reapproved 2003) (Test specimens preparation according to ASME section IX, 2004 edition July 1, 2004) - AWS D1.1/D1.1 M:2004 - ANSI/AASHTO/AWS D1.5-96

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Accreditation No. : TESTING 0158

Laboratory Status :  Permanent  Site  Temporary  Mobile

Item/Product Tested	Specific Test/ Range of Measurement	Standard/Test Method/ Technique Used
3. Weld specimen in iron and steel product (cont.)	Mechanical testing (cont.) - Impact test • Charpy V notch Energy 6.25 J to 325.00 J At temperature - 50 °C to 30 °C	- ASTM A 370-03a (Test specimens preparation according to ASME section IX, 2004 edition July 1, 2004) - AWS D1.1/D1.1 M:2004 - ANSI/AASHTO/AWS D1.5-96

Date of Issue : 30<sup>th</sup> May 2007

Signature :



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