

## ภาคผนวก ข-43

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แผนและผลการบำรุงรักษาท่อขนส่ง

S and L Specialty Polymers Co.,Ltd				Equipment PM plan of 2022 ( 0.25year=3mth, 0.33year=4mth, 0.50year=6mth )				* by SandL * by Maker		Plan year: 2022 Revision: 00 ( 05-05-2022 )		Year 2022 05 MAY 2022											
NO.	Equipment	Tag No.	P&ID No.	Name	Type/Model	Detail	Period (year)	Last service (year)	Next service (year)	Jan.	Feb.	Mar.	Apr.	May	Jun	July	Aug.	Sep.	Oct.	Nov.	Dec.		
261	Overhead crane	KZ15-1-A	Reslurry house	Hoist Mono rail	Overhead Crane 2 tons	PM package unit	0.25	2021	2022	*		*			*		*				*		
		KZ15-1-A				Loadtest	1.00	2021	2022						*								
262	Overhead crane	KZ15-2-A	Reslurry house	Hoist Mono rail	Overhead Crane 2 tons	PM package unit	0.25	2021	2022	*		*			*		*				*		
		KZ15-2-A				Loadtest	1.00	2021	2022						*								
263	Overhead crane	KZ13-A	V37 A	Hoist Mono rail	Overhead Crane 1.6 tons	PM package unit	0.25	2021	2022	*		*			*		*				*		
		KZ13-A				Loadtest	1.00	2021	2022						*								
264	CL2 piping	CL2 piping	CL2 line	CL2 piping	CS and PTFE lining	Thickness inspection	1.00	2021	2022					*									
265	Bag Filter	S53-P	1002	Bag filter for PVC loading	4,348m3/hr Casing SUS304	Visual Inspection	1.00	2020	2021											*			
266	Bag Filter	S52-1-P	1003	Bag filter for PVC Silo	4,000m3/hr Casing SUS304	Visual Inspection	1.00	2021	2022											*			
267	Bag Filter	S52-2-P	1003	Bag filter for PVC Silo	4,000m3/hr Casing SUS304	Visual Inspection	1.00	2021	2022											*			
268	Bag Filter	S52-3-P	1003	Bag filter for PVC Silo	4,000m3/hr Casing SUS304	Visual Inspection	1.00	2021	2022											*			
269	Bag Filter	S52-4-P	1003	Bag filter for PVC Silo	4,000m3/hr Casing SUS304	Visual Inspection	1.00	2021	2022											*			
270	Bag Filter	S31-1-P	1004	Bag filter for PVC Weighing Hopper	1,300Nm3/hr Casing SUS304 PE	Visual Inspection	1.00	2021	2022											*			
271	Bag Filter	S31-2-P	1004	Bag filter for PVC Weighing Hopper	1,300Nm3/hr Casing SUS304 PE	Visual Inspection	1.00	2021	2022											*			



**INSPECTION REPORT  
FOR  
S&L SPECIALTY POLYMERS CO., LTD.**

**VISUAL EXAMINATION  
FOR  
LINE CHLORINE GAS**

**INSPECTION DATE  
4 - 7 April 2022**

**PREPARED BY  
IS INDUSTRIE (THAILAND) LTD.**

<b>PROJECT :</b>	Pipeline Inspection	<b>DATE:</b>	4 - 7 April 2022
<b>CLIENT :</b>	S&L SPECIALTY POLYMERS CO., LTD.	<b>LOCATION:</b>	Rayong
<b>WELDER No.:</b>	N/A	<b>WELDING PROCCE:</b>	N/A
<b>NDE METHOD:</b>	Visual inspection	<b>REFERENCE CODE :</b>	API 570

00	19/04/2022	Ms.Usanee P.	Mr. Witthawat S.	
Rev.	Date	Inspected By	Approve By	Approved By Client's Approved By Owner

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	Customer / Client: S&L SPECIALTY POLYMERS CO., LTD.
Rev: 00      Effective date: May 17, 2013	

Technical Data	
Line No. :	CL-200-A5C-16001-H25
Description :	Pipe
Design Pressure :	N/A Kg/cm <sup>2</sup> G
Design Temperature :	N/A °C
Fluid :	CL
Material :	Carbon Steel

**Type of inspection**

- External Visual inspection**
  - Extent of examination 100% VT
- CUI inspection**
  - Extent of examination random
- Vibration piping inspection:** N/A

**Summary : Visual inspection, Corrosion Under Insulation (CUI)**

Inspection item	Comment
<b>Leak :</b> VT not found leakage of piping system <ul style="list-style-type: none"> <li>➤ Process</li> <li>➤ Steam tracing</li> <li>➤ Existing Clamps</li> </ul>	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> Normal <input type="checkbox"/> Abnormal <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Normal <input type="checkbox"/> Abnormal <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Normal <input type="checkbox"/> Abnormal
<b>Additional comment :</b>	<b>No comment</b>
<b>Misalignment :</b> VT not found of piping Misalignment <ul style="list-style-type: none"> <li>➤ Piping misali./Restricted movement</li> <li>➤ Expansion joint misalignment</li> </ul>	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Abnormal <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Normal <input type="checkbox"/> Abnormal
<b>Additional comment :</b>	<b>No comment</b>
<b>Vibration :</b> <ul style="list-style-type: none"> <li>➤ Excessive overhung weight</li> <li>➤ Inadequate support.</li> <li>➤ Thin, small-bore, or alloy piping</li> <li>➤ Threaded connections</li> <li>➤ Loose supports causing metal wear</li> </ul>	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> Normal <input type="checkbox"/> Abnormal <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Normal <input type="checkbox"/> Abnormal <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Normal <input type="checkbox"/> Abnormal <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Normal <input type="checkbox"/> Abnormal <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Normal <input type="checkbox"/> Abnormal
<b>Additional comment :</b>	<b>No comment</b>





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Inspection item	Comment
<b>Supports :</b>	
➤ Shoes off support	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Abnormal
➤ Hanger distortion or breakage	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> Normal <input type="checkbox"/> Abnormal
➤ Bottomed-out springs	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> Normal <input type="checkbox"/> Abnormal
➤ Brace distortion/breakage	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> Normal <input type="checkbox"/> Abnormal
➤ Loose brackets	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> Normal <input type="checkbox"/> Abnormal
➤ Slide plates/rollers	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Abnormal
➤ Counter balance condition	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> Normal <input type="checkbox"/> Abnormal
➤ Support corrosion	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Abnormal
<b>Additional comment :</b>	<ul style="list-style-type: none"> <li>- Base plate not contract with floor.</li> <li>- Bolts not extend through nut.</li> <li>- Many points on the local pipe lost of u-bolt at first floor area.</li> </ul>
<b>Corrosion :</b>	
➤ Bolting support points under clamps	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Abnormal
➤ Coating/Painting deterioration	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Abnormal
➤ Soil-to-air interface	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> Normal <input type="checkbox"/> Abnormal
➤ Insulation interfaces	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Abnormal
➤ Biological growth	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Abnormal
<b>Additional comment :</b>	<b>No comment</b>
<b>Insulation :</b>	
➤ Damage/penetrations	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Abnormal
➤ Missing jacketing/insulation	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Abnormal
➤ Sealing deterioration	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Abnormal
➤ Bulging	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Abnormal
➤ Banding (broken/missing)	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Abnormal
<b>Additional comment :</b>	<b>No comment</b>



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## INSPECTION PICTURE

Item	Picture	Description
1		<p><b>For Visual Overview</b> <b>Date : 4 - 7 April 2022</b></p> <p>Bolts were light surface rust only, did not found rust scale due to corrosion. (General corrosion on bolts and nuts).</p>
2		<p><b>For Visual ( CUI )</b> <b>Date : 4 - 7 April 2022</b></p> <p>On the local Open insulation Elbow was good surface condition of piping under insulation. No visible rust from visual inspection on this area.</p>
3		<p><b>For Visual ( CUI )</b> <b>Date : 4 - 7 April 2022</b></p> <p>On the local Open insulation Elbow and straight pipe were good surface condition of piping under insulation. No visible rust from visual inspection on this area.</p>



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## INSPECTION PICTURE

Item	Picture	Description
4		<p><b>For Visual ( CUI )</b> Date : 4 - 7 April 2022</p> <p>On the local Open insulation Elbow was good surface condition of piping under insulation.</p> <p>No visible rust from visual inspection on this area.</p>
5		<p><b>For Visual ( CUI )</b> Date : 4 - 7 April 2022</p> <p>On the local Open insulation Elbow was good surface condition of piping under insulation.</p> <p>No visible rust from visual inspection on this area.</p>
6		<p><b>For Visual ( CUI )</b> Date : 4 - 7 April 2022</p> <p>On the local Open insulation Elbow was good surface condition of piping under insulation.</p> <p>No visible rust from visual inspection on this area.</p>

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## INSPECTION PICTURE

Item	Picture	Description
7		<p>For Visual External Date : 4 - 7 April 2022</p> <p>Good surface condition.</p> <p>Joint connection of piping system. No leak.</p>
8		<p>For Visual External Date : 4 - 7 April 2022</p> <p>Good surface condition.</p>
9		<p>For Visual External ( Painting/Coating ) Date : 4 - 7 April 2022</p> <p>Good surface condition.</p> <p>Joint connection of piping system. No leak.</p>



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## INSPECTION PICTURE

Item	Picture	Description
10		<p><b>For Visual External (Joint Flange)</b> Date : 4 - 7 April 2022</p> <p>On the local Bolts &amp; Nuts were light surface rust only, did not found rust scale due to corrosion.</p> <p>Type of corrosion</p> <ul style="list-style-type: none"> <li>- General corrosion on bolts and nuts.</li> </ul>
11		<p><b>For Visual External ( on the local pipe support )</b> Date : 4 - 7 April 2022</p> <p>VT was found base plate not contract with floor.</p> <p>Recommended should be install guide support stopper at both sides dummy support and insert plate.</p>
12		<p><b>For Visual External ( Joint flange )</b> Date : 4 - 7 April 2022</p> <p>VT was found bolts not extend through nut.</p> <p>Recommend should be replacing Bolts.</p> <p><b>Note;</b> in acc. Code B31.3 para. 335.2.3 <b>Bolt Length.</b> Bolts shall extend through their nuts.</p>

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### INSPECTION PICTURE

Item	Picture	Description
10		<p>For Visual External ( pipe support ) Date : 4 - 7 April 2022</p> <p>Incorrect fix pipe support Was found many points on the local pipe lost of u-bolt at first floor area.</p>
11		<p>For Visual External ( Coating ) Date : 4 - 7 April 2022</p> <p>Good surface condition.</p> <p>Joint connection of piping system. No leak.</p>