



HA THANH

a Rubber & Flake lining industry company

PIPE AND LARGE TANK AT SITE





CUSTOMER FIRST | QUALITY FIRST | HONEST AND TRUSTWORTHY

Ha Thanh Industrial Co., Ltd

Rubber and Resin lining is an application method used to protect various type of systems by lining corrosion and abrasion-resistant rubber upon the surface or inside of pipes and tanks.

With over 12 years' experience and technical know-how rubber lining method and technology of vulcanizing. Ha Thanh is leading applicator of protective linings of rubber and flake materials.



SINCE 2011

Our mission, values and vision

- Aiming for the highest standards of quality workmanship and behaviour in everything we do.
- Leading the way forward in protective linings and applications.
- Reducing time and cost for customer.



Company Data

► Information

Company name	Ha Thanh Industrial Co., Ltd.
Establishment	September 24 th , 2011
Head Office	Victory Tower, #24.07, 24 Fl - Phu My Hung, 12 Tan Trao St., Tan Phu, Dist. 7, HCM City
Tel	+84 28-5413 8661 Mobile: 0909 927 826
E-mail	sales@hathanhcorp.com
website	https://htic-rubber.vn
Factory	973, 30/4 Street, W. 11, Vung Tau City
Employee	34 persons
Iso Certificate	9001-2015
Business	Rubber lining, Rubber molding, Flake lining
Business Partner	OHJI Rubber & chemicals Co., Ltd. (Japan)



► Product Lining

Pipes	Sea water pipe
Storage Tank	Media filter vessel
Degreasing Tank	Iron-and-steel and metallurgic industry
Plating Tank	Mineral treatments
Thickener	Laundry equipment
Hydrochloric Acid Tank (HCL Tanks)	Attrition Scrubbers
Desalination System	Transport of dangerous materials
Phosphoric Acid Equipment	Paper industry
Phosphoric Acid Condenser	Piping
High Analysis Compound Fertilizer	Barrel washer
Water Box Condenser	Chemical transportation
Incineration Plant	DAP units
Wet Flue Gas Desulfuration	

► Services

1. In-Shop Rubber Lining
2. On-Site Rubber Lining
3. Maintenance & Repair
4. Pipe Rubber Coating
5. Flake Lining
6. Blast & Painting
7. Steel Fabrication
8. Neoprene Riser Clamps

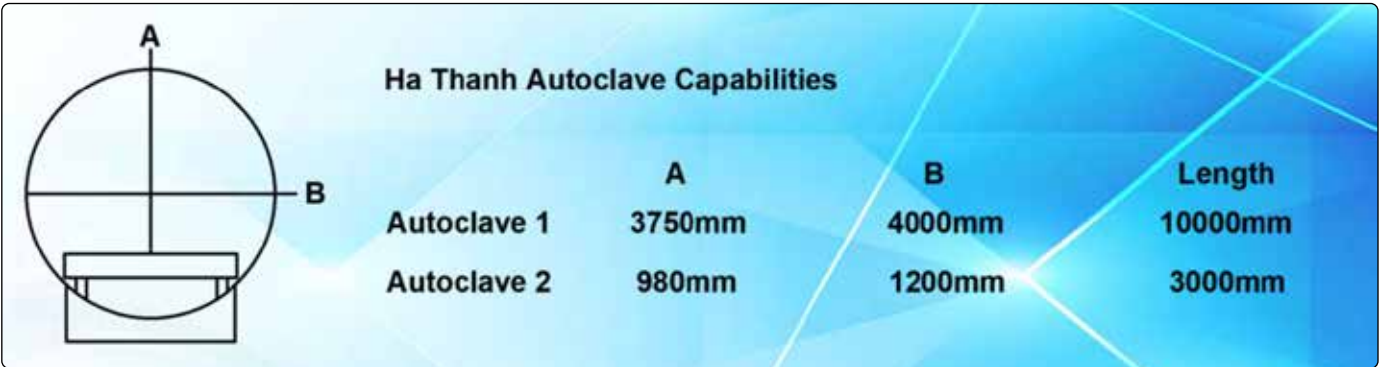


Ha Thanh Rubber Lining Workshop Facility

Ha Thanh workshop's and facilities is located in Ba Ria - Vung Tau Province and within 46 kilometer ~ 72 kilometer from Ho Chi Minh City, Binh Duong and Dong Nai. Ha Thanh Industrial Co., Ltd is one of the few rubber lining and flake lining factory in Vietnam with a facility that can process large equipment.

And we have customized our equipment over the years to give us the ability to apply a wide variety of materials to the interior of assorted pipe spool shapes and dimensions. See list below for our facility.

Rubber lining workshop / Storage yard	2800 m ²
Lining tools equipment for pipe and spool from (25A~400A)	2
Large Autoclave (Ø4,000x 12,000mmL) / Adamson Type	1
Small Autoclave (Ø1,200x 3,000mmL)	1
Boiler for Field lining (1.5 ton/hr), (1.2 ton/hr), (1 ton/hr) & (50kg/hr)	4
Crane 10 ton, 5t, 1t, truck 2,5 ton; Pick-up 850kg, Forklift 4.5ton; 2.5t	9
Machine for remove old rubber lined layer, Flake layer, Paint and composite layer	1



Rubber lining Factory & Production Office



Granry Crane 10T



Rubber Lining Factory



Overhead Crane 5T, 2.5T

What We Do Rubber Lining



Rubber sheets shall be firmly bonded to steel substrate after application of primer and adhesive. Lining is done by hand by our experienced staff for a durable finished product. After application of rubber sheets and proper vulcanizing, rubber lining provides rubber elasticity, superior strength and chemical resistance.

Rubber Lining is an application method used to protect multiple types of systems by lining corrosion and abrasion-resistant rubber upon the surface.

Examples of Rubber Lining Application

Pollution Control Equipment

Mainly applied to environmental loading reduction equipment in power plant and various plant.



- Water Box Condenser
- Incineration Plant
- Wet FGD Systems

Non-Ferrous Metals Refining Industry

Mainly application to electrolysis refining system for zinc, nickel, copper, and chemical treatment equipment.



- Gypsum Reactor
- Ion Exchange Tower
- Thickner

Inorganic Chemical Industry

Mainly applied to processing equipment and storage tank for caustic soda, hydrochloric and other high corrosive.



- Hydrochloric Acid Tank
- Desalination System
- Pure Water Production System

Chemical Fertilizer Industry

Mainly applied to phosphoric acid equipment and treatment equipment for impurities like fluorine chemical.



- Phosphoric Acid equipment
- Phosphoric Acid Condenser
- High-Analysis Compound Fertilizer Equipment

Iron and Steel Industry Industry

Mainly applied to chemical treatment system for steel plate treatment equipment for chemical and waste gas.



- Pickling Tank
- Degreasing Tank
- Plating Tank

Transport Equipment

Shock and vibration absorbing rubber material will be applied to transporting vessels for corrosive chemical.



- Chemicals Cargo Ship
- Lorry Tank
- Tanker

Ha Thanh Pipe & Spool Rubber Lined Product

With a largest autoclaves in the industry, Ha Thanh can properly cure rubber applied to pipe in lengths up to DN2800. Autoclave curing offers the greatest potential for producing exceptional rubber-to-substrate bond strength and high-quality rubber products.

We offer application diameter small size to large size pipe (Radius Bends, Reducing Tees, Tees, Branches). The pipes after vulcanization rubber surface is smooth, beautiful and excellent chemical resistance to acids.

Our method of Vulcanization

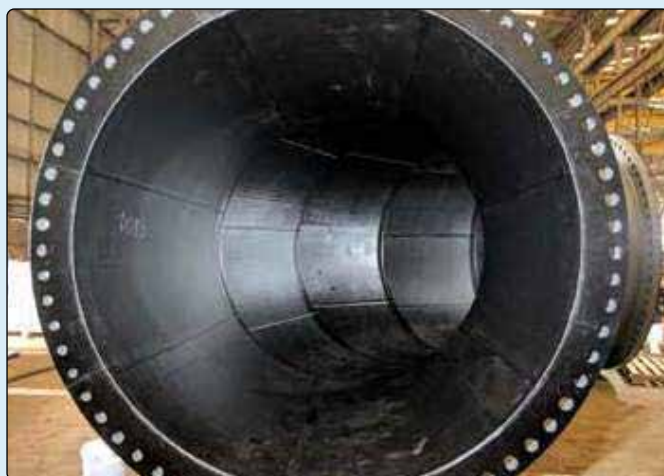
- Autoclave
- Atmospheric pressure steam curing
- Internal steam curing



Ha Thanh Pipe & Spool Rubber Lined Product



Pipe and spool lined for Formosa Power Plant Project.



Ha Thanh Pipe & Spool Rubber Lining



► Step 1: Surface treatment SA 2.5 According to ISO 8501 (Near White)



Small size blasting



Medium size



Large size

Spool surfaces to be lined shall be grid or sand blasted to remove rust and spatter or old coatings completely from metal surface.

► Step 2: Primer/ Bond Coating



Bonding Coating



Adhesive Coating



Primer Coating

Blasted surfaces shall be coated special primer for rubber lining. Appropriate rubber cement (adhesive) bonding shall be applied.

Ha Thanh Pipe & Spool Rubber Lining

► Step 3: Rubber Lining



Small size rubber lining



Medium size rubber lining



Huge pipe rubber lining

Rubber sheet cut into suitable size shall be firmly bonded to the substrate with hand roller to eliminate air pockets between the rubber and the substrate.

► Step 4: Inspection before Vulcanizing



Pinhole Inspection



Pinhole Inspection



Pinhole Inspection

Any defects shall be found and repaired through pinhole and appearance inspection.

► Step 5: Autoclave Vulcanizing



Mass pipe in vulcanizing



Spool vulcanizing by Autoclave



Large pipe curing in direct steam

Autoclave curing shall be carried out with pressured steam for shop lining.

Ha Thanh Pipe & Spool Rubber Lining

► Step 6: Inspection after Vulcanization



Hammering Inspection



Thickness Inspection



Hardness Inspection

Any defects shall be found and repaired through pinhole hardness, thickness and appearance inspection.

► Step 7: Painting / Packing and Shipping



Pipe and spool after painted.



Flange and external rubber surface shall be in protection packaging for delivery.



Ha Thanh Rubber Lining Material

Our rubber materials use for application has imported from OHJI (Japan) manufacture.
We provide rubber sheet, adhsvie, materials and the supervisor which will be best suited for your needs.

Natural Hard Rubber

OHJI - HARD

Material	Characteristics	General Application	Curing Method		Hardness
			Autoclave	Open steam	
E-5	Hard rubber used for chemical resistance under high temperature condition. Less flexible than E-7.	Electrolytic equipment Recovery system for hydrochloric acid & alcohol Bromine production equipment	●		70 ~ 90 Type/Shore D
E-5I	Compound of low Ca and Mg.	Special for Cell - liquor of IM electrolysis	●		60 ~ 80 Type/Shore D
E-7	Wide range of corrosion resistance. Excellent flexibility. Standard grade of natural hard rubber.	Hydrochloric acid, Dilute sulfuric acid, Phosphoric acid, Caustic soda, etc.	●		65 ~ 85 Type/Shore D
E-7i	Compound of low Ca and Mg	IM electrolysis Used for the case of disrelishing metal ion	●		65 ~ 86 Type/Shore D
E-8	Used for oxide and osmotic agent, such as gaseous chlorine.	For equipment for gaseous chlorine (wet) of electrolysis in saturated	●		70 ~ 90 Type/Shore D
E-15	General hard rubber for site application.	Used when the organic solvent such as SO is mixed such as gaseous chlorine. Same as E-7		●	60 ~ 80 Type/Shore D
E-16	Fast vulcanizing hard rubber. Used as SH type (Soft-Hard-Soft lining). Gaseous chlorine.	Same as E-7		●	60 ~ 80 Type/Shore D
E-18	For gaseous chlorine for site application.	Same as E-8		●	65 ~ 85 Type/Shore D
E-20	Hard rubber for site application. Compound of low Ca and Mg.	Same as E-7I		●	60 ~ 80 Type/Shore D

* With regard to service condition, in the case of food-related, E-7, E-15 are certified by the Japan Ministry of Welfare No.85

Remarks on Chemical Resistance Charts

Chemical resistance are determined according to test results and actual long-term performance. And accurate material selection requires careful consideration in terms of operating conditions and specifications of equipment.

Therefore, please consult with us in advance for selection of rubber material against your chemical.

Ha Thanh Rubber Lining Material

Natural Soft Rubber

OHJI-SOFT

Material	Characteristics	General Application	Curing Method		Hardness
			Autoclave	Open steam	
R-4	Used in the case of extreme slurry abrasion where R-6 is not sufficient.	For abrasion resistance of slurry	●	●	42 ± 7 Type A
R-5	Inadequate for slurry abrasion, but applicable for abrasion with large diameter of coarse particle and high loading.	For special abrasion resistance	●	●	62 ± 7
R-6 (R-16)	Standard grade of natural soft rubber for acid resistance. Alkali - resistance and slurry abrasion resistance shall be separately considered.	Storage and piping for chemical resistance Suitable for caustic soda	●	●	62 ± 7 Type A
R-7 (R-17)	Inadequate for general acid and alkali resistance. Used for surface application of single or on hard rubber.	Hydrofluoric acid resistance (Only a little amount in phosphoric acid)	●	●	67 ± 7
R-8 (R-18)	Soft rubber blended with hard rubber for vulcanization.	Used as SH type (SH-8168, SH-8078, SH-78)	●	●	70 ± 7 Type A
R-8i	Compound of low Ca and Mg	Same as R-6 and R-8	●	●	42 ± 7 Type A

* With regard to service condition, in the case of food-related, R-6 (R-16) is certified by the Japan Ministry of Welfare No.85.

Remarks on Chemical Resistance Charts

Chemical resistance are determined according to test results and actual long-term performance. And accurate material selection requires careful consideration in terms of operating conditions and specifications of equipment.

Therefore, please consult with us in advance for selection of rubber material against your chemical.

OHJI's rubber lining materials are used for a wide variety of applications. Our experienced technical staff shall select the material which will be best suited for your needs.

Butyl Rubber

OHJI-I

Material	Characteristics	General Application	Curing Method		Hardness
			Autoclave	Open steam	
B-5 (B-15)	Standard grade of butyl rubber. The most chemical resistance rubber. Excellent in vapor permeability among the natural rubber. Certified as water supply standard. (JWWA Z109:2004)	Excellent resistance to H ₂ SO ₄ and HF FGD equipment Phosphoric acid plant Nickel plant	●	●	52 ± 7 Type A
B-5B (B-15B)	Halogenated (bromo) butyl rubber. Same performance as B-5 (B-15)	FGD equipment Phosphoric acid plant Nickel plant	●	●	52 ± 7 Type A
B-55B	Self vulcanization type of butyl rubber. Vulcanization with operating temperate.	FGD equipment	●	●	52 ± 7 Type A
B-5C (B-15C)	Halogenated (chlorinated) butyl rubber. Same performance as B-5 (B-15)	FGD system in overseas Phosphoric acid plant Nickel plant	●	●	52 ± 7 Type A
B-5S	Pre-cured type butyl rubber. Not necessary for vulcanization.	Large size tank for field For repair at FGD system	Not required		52 ± 7 Type A
B-5BS	Pre-cured Bromo butyl rubber. Not necessary for vulcanization.	Large size tank for field For repair at FGD system	Not required		52 ± 7 Type A
B-7 (B-17)	Butyl rubber for NaClO (Black)	Storage and piping of hypo-chlorite soda	●	●	52 ± 7 Type A
B-215	Non contamination grade for sulfuric acid	High quality sulfuric storage	●	●	52 ± 7 Type A

* With regard to service condition, in the case of food-related, B-5 (B-15), B-7 (B-17) are certified by the Japan Ministry of Welfare No.85.

Remarks on Chemical Resistance Charts

Chemical resistance are determined according to test results and actual long-term performance. And accurate material selection requires careful consideration in terms of operating conditions and specifications of equipment.

Therefore, please consult with us in advance for selection of rubber material against your chemical.

Ha Thanh Rubber Lining Material

Chloroprene Rubber

OHJI-PRENE

Material	Characteristics	General Application	Curing Method		Hardness
			Autoclave	Open steam	
C-5	Better performance for workability of lining application.	Seawater pipe. Water box condenser.	●	●	62 ± 7 Type A
C-55	Self vulcanization type of CR. Vulcanization with operating temperature.	NaOH storage, PAC, CaCl. Wastewater treatment equipment.	●	●	62 ± 7 Type A
C-55F	Food grade of self vulcanization type of CR.	Storage tank for NaOH as a food additive.	●	●	62 ± 7 Type A
C-6	Standard grade of CR. Except oxidizing chemical resistance, heat and oil resistance, also excellent in ozone resistance. Can be applied for coexistent with hydrofluoric acid such as phosphoric acid production.	Phosphoric acid production related equipment. Seawater pipe. Water box condenser.	●	●	62 ± 7 Type A
H-411	Certified with standard of water service (JIS K 6353-1997).	Tap water piping.	●		62 ± 7 Type A

* With regard to service condition, in the case of food-related, C-55F is certified by the Japan Ministry of Welfare No.85.

Special Material (EPDM)

OHJI-S

Material	Characteristics	General Application	Curing Method		Hardness
			Autoclave	Open steam	
S-2	Certified as water supply standard. (JWWA Z108:2004). Heat and ozone resistance.	Water supply equipment with heat.	●		70 ± 7 Type A
S-6	Certified as water supply standard. (JWWA Z108:2004). Heat and ozone resistance.	Water supply equipment with heat.	●		64 ± 7 Type A

Special Material (NBR)

OHJI-N

Material	Characteristics	General Application	Curing Method		Hardness
			Autoclave	Open steam	
N-8	Soft rubber with oil resistance.	Bucket of oil storage.	●		70 ± 7 Type A

Natural Soft and Rubber (SH/SH Type)

Material	Characteristics																															
SH-74	<p>Although soft rubber type (R, C, B and S type) is not be damaged by shock or vibration, there is a problem in this point for hard rubber type (E type). When hard rubber is used for corrosion resistance and shock and vibration resistance need to be taken advantage, triple layer application or soft-hard-soft (SH type) is used. SH (Sunhard) specifies the sign of each structure (hard-soft and soft-hard-soft) from metal surface, and the contents of thickness and material differs depending on the required service condition.</p> <p>In this case, therefore, it is separately specified. Designed value of standard hardness differs from by each rubber structure.</p>																															
SH-8078																																
SH-78	<table><tr><th rowspan="2">Material</th><th colspan="3">SH Type Structure (Material of Each layer)</th><th rowspan="2">Curing Method</th><th rowspan="2">©Hardness tester (according to JIS K6256)</th></tr><tr><th>Substrate</th><th>Middle Layer</th><th>Facing Surface</th></tr><tr><td>SH-8168</td><td>R-8</td><td>E-16</td><td>R-8</td><td>Open steam</td><td>A: Type A Durometer</td></tr><tr><td rowspan="3">SH-8168</td><td>SH-8078</td><td>R-8</td><td>E-7</td><td rowspan="3">Autoclave</td><td>D: Type D Durometer</td></tr><tr><td>SH-78</td><td>E-7</td><td>R-8</td></tr><tr><td>SH-76</td><td>E-7</td><td>R-6</td></tr></table>					Material	SH Type Structure (Material of Each layer)			Curing Method	©Hardness tester (according to JIS K6256)	Substrate	Middle Layer	Facing Surface	SH-8168	R-8	E-16	R-8	Open steam	A: Type A Durometer	SH-8168	SH-8078	R-8	E-7	Autoclave	D: Type D Durometer	SH-78	E-7	R-8	SH-76	E-7	R-6
Material	SH Type Structure (Material of Each layer)			Curing Method	©Hardness tester (according to JIS K6256)																											
	Substrate	Middle Layer	Facing Surface																													
SH-8168	R-8	E-16	R-8	Open steam	A: Type A Durometer																											
SH-8168	SH-8078	R-8	E-7	Autoclave	D: Type D Durometer																											
	SH-78	E-7	R-8																													
	SH-76	E-7	R-6																													
SH-76																																

* With regard to service condition, in the case of food-related, SH-8078 is certified by the Japan Ministry of Welfare No.85

Remarks on Chemical Resistance Charts

Chemical resistance are determined according to test results and actual long-term performance. And accurate material selection requires careful consideration in terms of operating conditions and specifications of equipment.

Therefore, please consult with us in advance for selection of rubber material against your chemical.

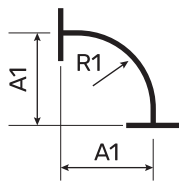
Feature of rubber lining

- Chemical resistance
- Shock resistance
- Abrasion resistance
- Pressure resistance
- Elasticity

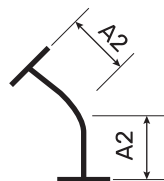
Advantage of Rubber Lining

- Reliable application
- Accurate lining thickness
- Excellence bonding
- Defect detection
- Able to maintenance

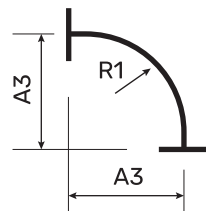
Standard size of Pipes for Rubber lining



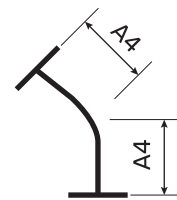
90D Long elbow



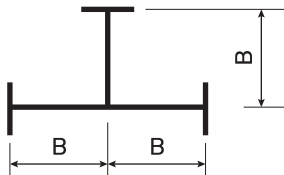
45D Long elbow



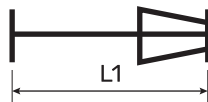
90D Smooth bend



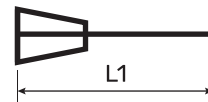
45D Smooth bend



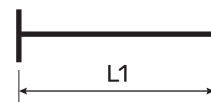
T-Pipe



Reducer



Reducer



Straight pipe

Size		Long elbow			Smooth Bend (3DR)			T-Pipe	Reducer	Straight pipe (Max.)
			90D	45D		90D	45D			
(B)	(A)	R1	A1	A2	R2	A3	A4	B	L1	L
1B	25A	38.1	90	90	-	-	-	80	-	1000
1-1/4B	32A	47.6	95	95	130	160	90	85	120	
1-1/2B	40A	57.2	100	100	150	180	100	90	120	
2B	50A	76.2	115	115	180	210	110	100	130	2750
2-1/2B	65A	95.3	130	130	230	260	130	115	150	
3B	80A	114.3	150	150	270	300	150	125	150	5500
3-1/2B	90A	133.4	170	170	-	-	-	135	160	
4B	100A	152.4	190	190	-	-	-	145	160	
5B	125A	190.5	195	195	-	-	-	165	200	
6B	150A	228.6	230	230	-	-	-	190	220	
8B	200A	304.8	310	310	-	-	-	225	230	
10B	250A	381.0	385	385	-	-	-	270	250	
12B	300A	457.2	465	465	-	-	-	310	300	
14B	350A	533.4	540	540	-	-	-	340	480	
16B	400A	609.6	615	615	-	-	-	370	500	
18B	450A	685.8	695	695	-	-	-	410	530	
20B	500A	762.0	770	770	-	-	-	450	650	
22B	550A	838.2	845	800	-	-	-	490		
24B	600A	914.0	920	900	-	-	-	500	9000	
26B	650A	990.6	1000	1000	-	-	-	565		900
28B	700A	1066.8	1075	1000	-	-	-	570		
30B	750A	1143.0	1150	1100	-	-	-	625		
32B	800A	1219.2	1225	1200	-	-	-	640		
34B	850A	1295.4	1300	1300	-	-	-	700		
36B	900A	1371.6	1380	1400	-	-	-	740		
38A	950A	1447.8	1455	1400	-	-	-	780		
40B	1000A	1524.0	1530	1500	-	-	-	820		

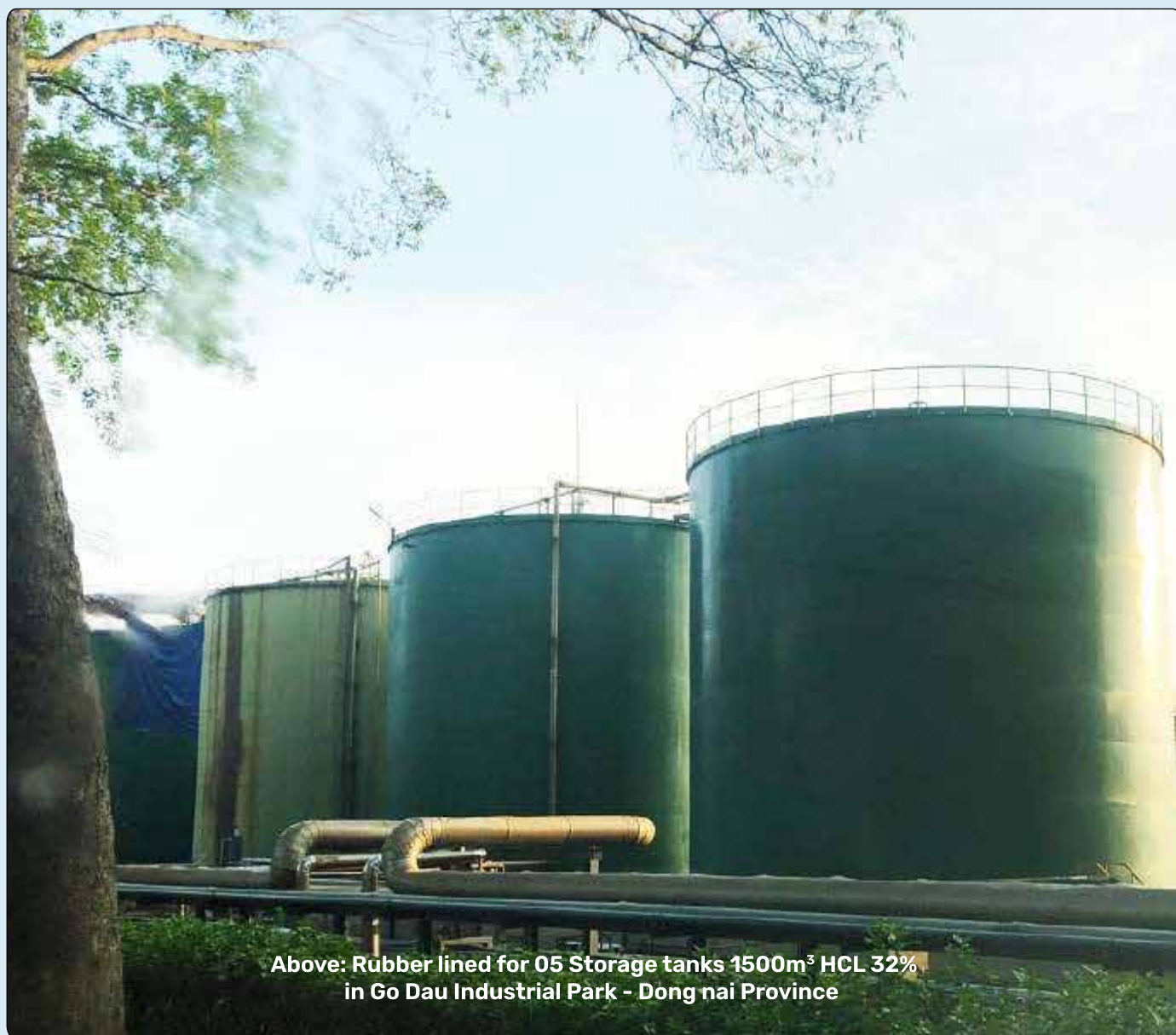
Ha Thanh Large Tank Lined Product

Perfect Service System in Field Lining

Large and huge equipment which is not able deliver to shop and for new lining can be lined at site field. Our experienced personnel are qualified to work on-site with equipment of any size by providing materials self-curing rubber, cold bonding or open steam rubber.

We provide several lining product services for Mining Equipment, Power Plant Equipment, Tanker, Chemical Processing Storage Tank.

Our rubber material have cultivated know-how in on-site lining method and mixture technology of vulcanizing rubber.



Above: Rubber lined for 05 Storage tanks 1500m³ HCL 32%
in Go Dau Industrial Park - Dong nai Province

Ha Thanh Rubber Lining Large Tank

► Step 1: Substrate Inspection



Tank body receiving inspection



Careful check weld line substrate



Fill or grinding not overlap-welded

Surface of rubber lining should be welded continuously and smoothly without any cavities or pinholes.

► Step 2: Blasting, Primer and Cement Bonding Coating



Ceiling blasting



Shell tank primer and bonding



Roof primer and bonding

Blasted surfaces shall be coated special primer for rubber lining. Appropriate rubber cement (adhesive) bonding shall be applied.

► Step 3: Cutting and Applying Rubber Sheet (RL)



Ceiling lining



Body tank lining



Bottom lining

Rubber sheet cut into suitable size shall be firmly bonded to the substrate with hand roller to eliminate air pockets between the rubber and the substrate.

Ha Thanh Rubber Lining Large Tank

► Step 4: Inspection before Curing



Full tank pinhole inspection



Bottom pinhole check



Ceiling pinhole check

Any defects shall be found and repaired through pinhole, thickness and appearance inspection.

► Step 5: Curing / Vulcanizing



Portable boiler for site steam curing



Install steam into vessel



Check atmospheric pressure steam curing

Curing in autoclave (at shop) or atmospheric pressure steam curing (at site) to obtain proper properties of rubber. Good rubber properties and bonding by pressured steam curing.

► Step 6: Final Inspection before delivery



Full tank pinhole inspection



Hardness check



Thickness check

Appearance test: No damaged, cuts, blisters and poor joints by Visual and Hammer.

Thickness test: with tolerance by Mangnetic micro tester.

Hardness test: with tolerance by Durometer A or D.

Pinhole test: No Pinhole for whole lining area by Pinhole tester.

Ha Thanh Rubber Lining Large Tank

► Step 7: Handover and Delivery



Final inspection in the presence of customer





REQUIREMENTS FOR SUBSTRATE PREPARATION

So that you will get the professional rubber lining job you expect, certain requirements (structure, shape, welding, etc) must be met before you send your substrate to us

For your details information, please contact us for follow the Guidance and requirement standard for design and fabrication on rubber lining



HOTLINE:

09877 01877

