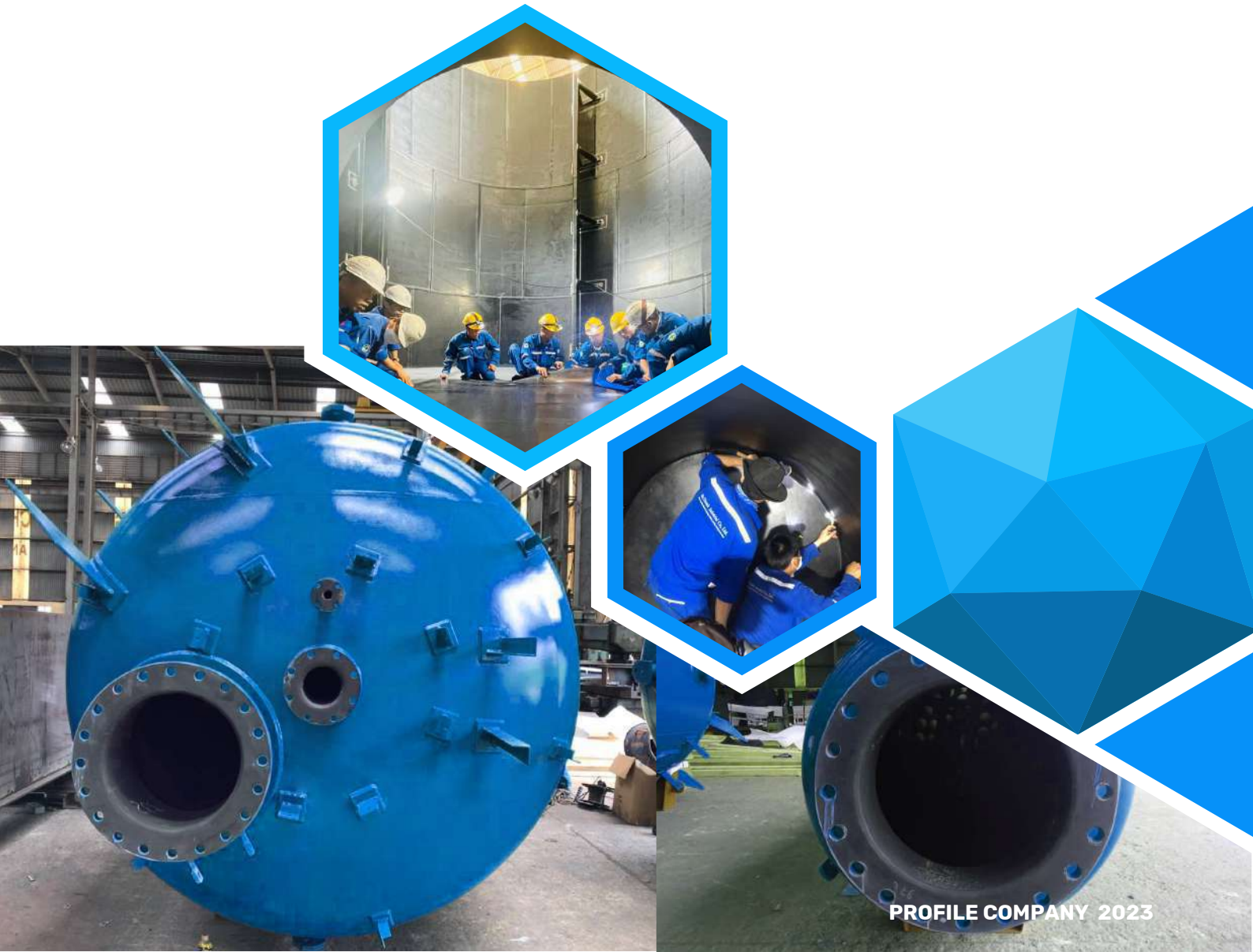
HA THANH

a Rubber & Flake lining industry company

RUBBER LINING FOR PIPE AND LARGE TANK



PROFILE COMPANY 2023

CUSTOMER FIRST | QUALITY FIRST | HONEST AND TRUSTWORTHY

Ha Thanh sets strict inspection standards to secure stable quality.
We deliver the high-quality products with added “Responsibility”.

Rubber and Resin lining technology has been applied to various kinds mechanical devices, such as a water purification equipment, population control equipment, sea water desalination equipment and medical products manufacturing and others.

Ha Thanh is specialised in surface protection and offers solutions anti-corrosion, abrasion and chemical damage. We provide rubber lining and glass flake lining services to Chemical Processing, Petro Chemicals, Petroleum, Chlor-Alkali, Power Generation & FGD Equipment, Wind Energy / Wind Tower, FERTILIZER, Mining, Steel Mill, Pulp & Paper Industry, Pharmaceutical, Food, Environment Air Pollution Control, Water Treatment, Marine Ship Building, Naval, Engineering Companies and others.

Ha Thanh uses materials, technology of rubber linings from OHJI Rubber & Chemicals Japan – OHJI is the leading and topshare rubber lining company in Japan was established in 1957.

Company Data

Information

Company name	Ha Thanh Industrial Co., Ltd.
Establishment	September 24th, 2011
Head Office	R.24-7, Floor 24 Victory Tower, Phu My Hung Urban, No. 12 Tan Trao Street Tan Phu ward, District 7, Ho Chi Minh City
Tel	+84 28-5413 8661 | Mobile: 0909 927 826
E-mail	sales@hathanhcorp.com
website	https://htic-rubber.vn
Factory	Vung Tau Comercial Port - Factory 5A-5B No. 973, 30-4 Street, Ward 11, Vung Tau City
Employee	34 persons
Iso Certificate	9001-2015
Business	Design, Fabrication, Control and Application Rubber lining application maintenance & supervisory work Rubber Molding, Glass Flake lining application, Flake material
Business Partner	OHJI Rubber & Chemicals Co., Ltd. (Japan)

Product Lining

Pipes	Media filter vessel
Storage Tank	Caustic Soda Tank (NaOH tank)
Pickling Tank - Pickling resin tank	Anion / Cation / Mixed bed Vessel
Degreasing Tank	Treatment of gases and fluids
Plating Tank	Iron-and-steel and metallurgic industry
Gypsum Reactor	Mineral treatments
Ion Exchange Tower	Launder equipment
Thickener	Attrition Scrubbers
Hydrochloric Acid Tank (HCL Tanks)	Transport of dangerous materials
Desalination System	Paper industry
Pure Water Production System	Naval and fishing sector
Phosphoric Acid Equipment	Piping
Phosphoric Acid Condenser	Washer / Cleaner machine
High Analysis Compound Fertilizer	Barrel washer
Water Box Condenser	Offshore pipe
Incineration Plant	Offshore riser clamp
Wet Flue Gas Desulfuration	Chemical vessel
Systems (FGD)	Chemical transportation
Sea water pipe	DAP units
Sand filter for Salt Water	Rubber Modling

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**

Rubber Lining Workshop Facilities

RUBBER LINING EQUIPMENT & FACILITIES	QUANTITY
Rubber lining workshop	1600m²
Storage Yard	900m²
Grit Blasting Room	80m²
Painting Room	400m²
Garden	150m²
Large - sized Vulcanizing Autoclave (Ø4,000 x 12,000mmL) / Adamson Type	1
Small - sized Vulcanizing Autoclave (Ø1,300 x 3,600mmL)	1
Inner Pipe Blasting Equipment (1 inches ~ 20 inches)	2
Gantry Crane 10T; Overhead Hoist 2T, 5T	4
Air Compressor (100HP) (20HP) (1HP, 2HP, 5HP, 10HP)	6
Forklift Truck	1
Truck for Site lining	4
Horizontal Steam Boiler for Shop lining (1,0 Ton/hr) (1,2 Ton/hr)	2
Portable Boiler for Site lining (50 kg/hr) (1,500 Ton/hr) and Accessories	2
Portable Induction Machince remove Rubber, Flake, Plastic and Paint	1

Rubber Lining Factory & Production Office

Grantry Crane 10T

Rubber Lining Factory

Autoclave Ø4,000 x 12,000mmL

Overhead Crane 5T, 2.5T

Grit Blasting Shop

Small Garden

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 reisitance.

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

General Rubber Lining Procedure Pipe & Spool

Step 1: Surface Treatment

Sand blasting

Sand blasting

Checking after blasting

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

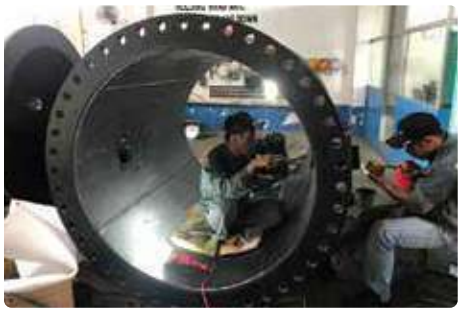
Primer Coating

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

General Rubber Lining Procedure Pipe & Spool

Step 3: Rubber Lining

Rubber Sheet Cutting



Rubber Lining

Rubber Lining

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

Step 4: Autoclave Curing

Vulcanizing Autoclave

Vulcanizing Autoclave

Vulcanizing Autoclave

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

Step 5: Inspection

Pinhole Inspection

Thickness/Hardness Inspection

Hamering Inspection

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

General Rubber Lining Procedure Pipe & Spool

Step 6: Painting


Pipe and spool after painted.

Step 7: Packing and Shipping



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

Spools shall be packed according to customers requirements.
Packing to avoid any during shipping spool.

Pipe & Spool Rubber Lined Products

Pipe and spool lined for Formosa Power Plant Project.

Pipe & Spool Rubber Lined Products
















Pipe & Spool Rubber Lined Products







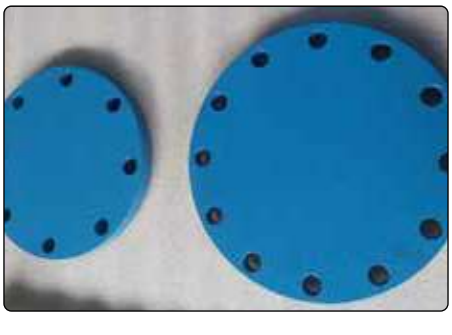




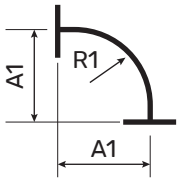




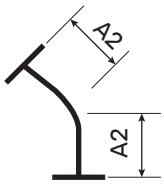




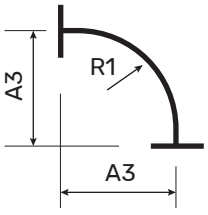

Standard size of Pipes for Rubber lining



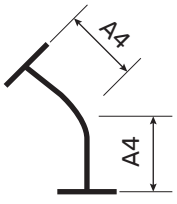
90D Long elbow



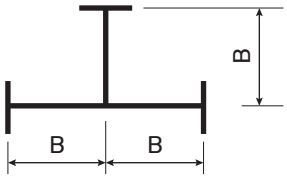
45D Long elbow



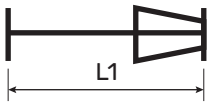
90D Smooth bend



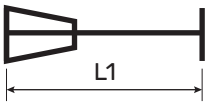
45D Smooth bend



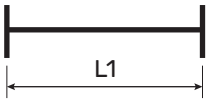
T-Pipe



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		

Rubber Lining Material

Our rubber materials use for application has imported from OHJI (Japan) manufacture.
We provide rubber sheet, adhsive, 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

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.

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 HSO and HFFGD equipment. Phosphoric acid plant.	●	●	57 ± 7 Type A
B-5C (B-15C)	Halogenated (chlorinated) butyl rubber. Same performance as B -15 (B-15).	FGD system in overseas.	●	●	57 ± 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	Not required	52 ± 7 Type A
B-7 (B-17)	Butyl rubber for NaClO (Black).	Storage and piping of hypo-chlorite soda.	●	●	57 ± 7 Type A
B-115	Non contamination grade for phosphoric acid.	High quality phosphoric acid storage.	●	●	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.

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

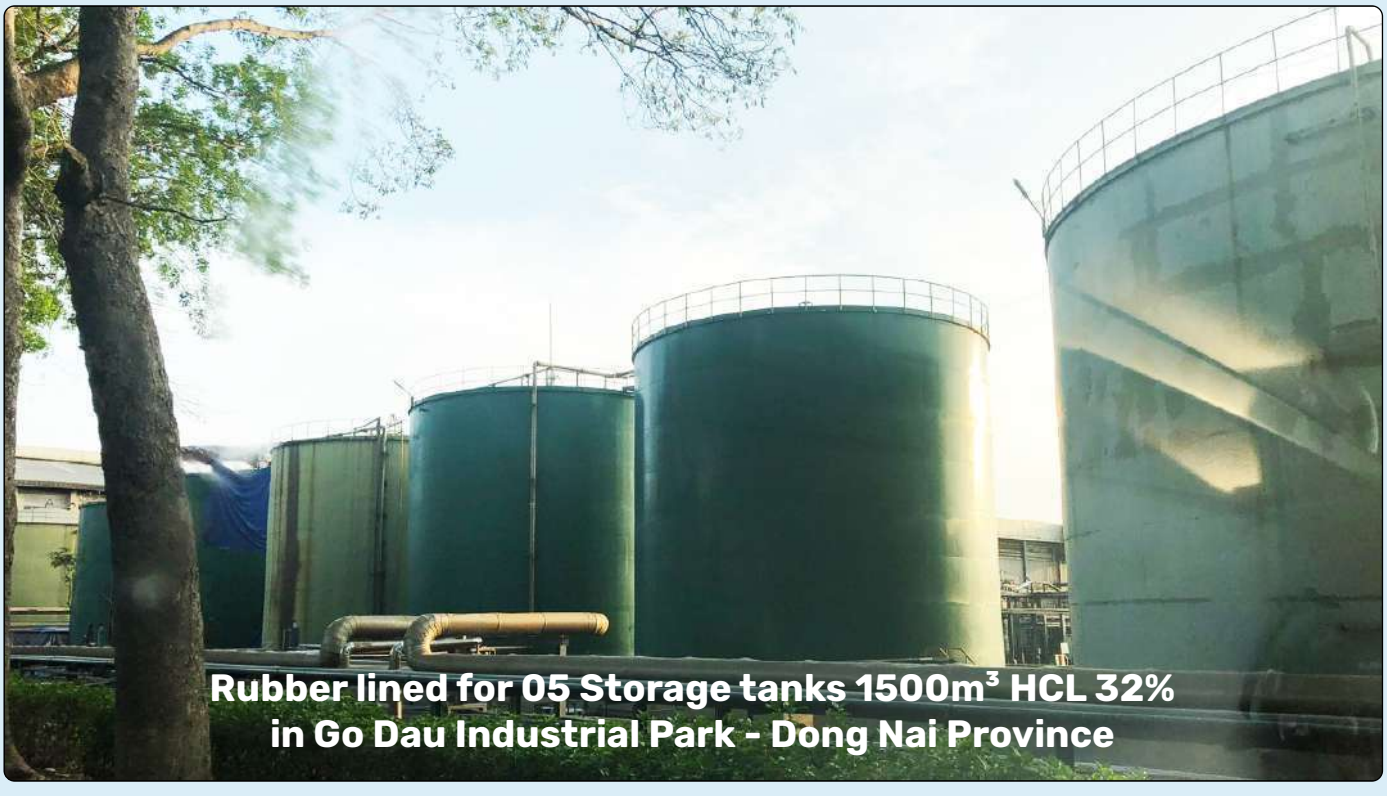
Natural Soft and Rubber (SH/SH Type)

Material	Characteristics
SH-74 SH-8078 SH-78 SH-8168 SH-76	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. In this case, therefore, it is separately specified. Designed value of standard hardness differs from by each rubber structure.

Material	SH Type Structure (Material of Each layer)			Curing Method	
	Substrate	Middle Layer	Facing Surface		
SH-8168	R-8	E-16	R-8	Open steam	©Hardness tester (according to JIS K6256) A: Type A Durometer D: Type D Durometer ©Temperature: 23±2°C
SH-8078	R-8	E-7	R-8	Autoclave	
SH-78	E-7	-	R-8		
SH-76	E-7	-	R-6		

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

General Rubber Lining Procedure Large Size tank At Site



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

Step 1: Substrate Inspection

Substrate inspection

Flat area should be butt-welded

Fill or grinding not overlap-welded

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

Step 2: Blasting

Sand/ Grid blasting

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

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

Step 3: Primer and Cement Bonding Coating

Bonding Application

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

Step 4: Rubber Sheet cutting

Rubber sheet cutting

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 5: Applying Rubber Sheet (RL)

Rubber lining

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

Step 6: Inspection before Curing

Inspection before curing

Inspection before curing

Inspection before Exhausting curing

Step 7: Curing/ Vulcanizing

Portable boiler for site steam curing

Install steam into vessel

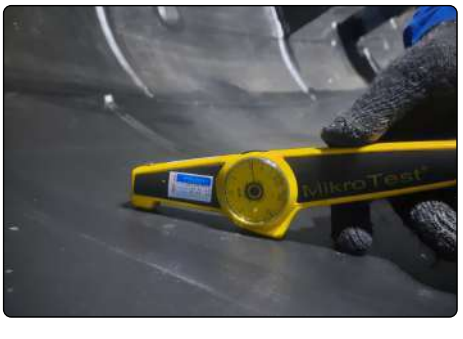
Check atmospheric pressure steam curing

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 8: Final Inspection before delivery

Pinhole check

Hardness check



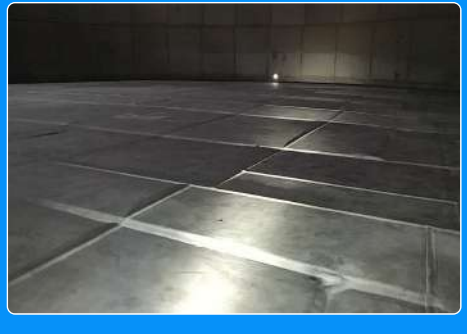
Thickness check

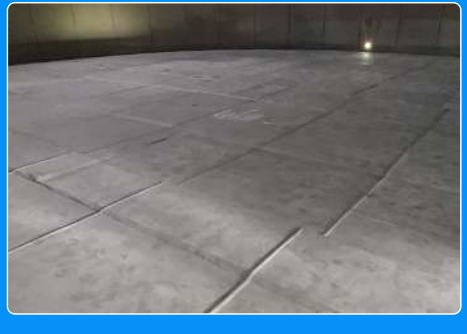
Appearance test: No damages, cuts, blisters and poor joints by Visual and Hammer.
Thickness test: with tolerance by Magnetic micro tester.
Hardness test: with tolerance by Durometer A or D.
Pinhole test: No Pinhole for whole lining area by Pinhole tester.

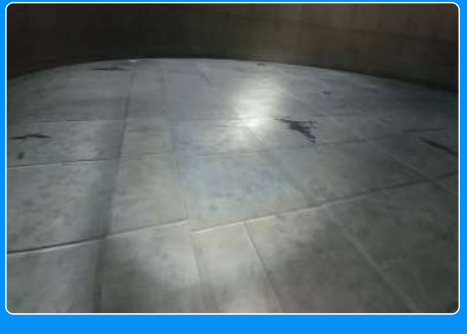
Step 9: Handover and Delivery

Cleaning for inspection tank body.

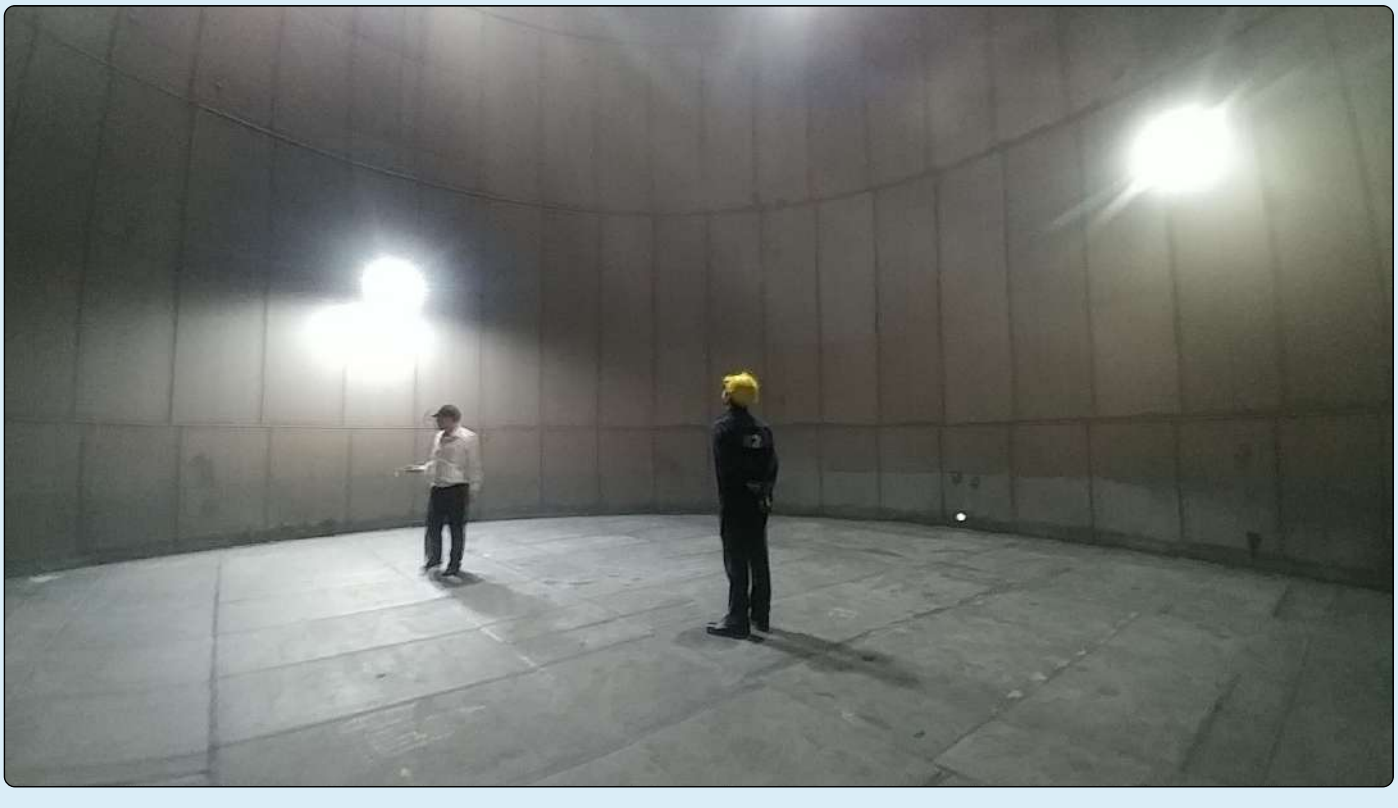
Completed Rubber lined shell tank.







Hard rubber 5mm lined on bottom tank before delivery.



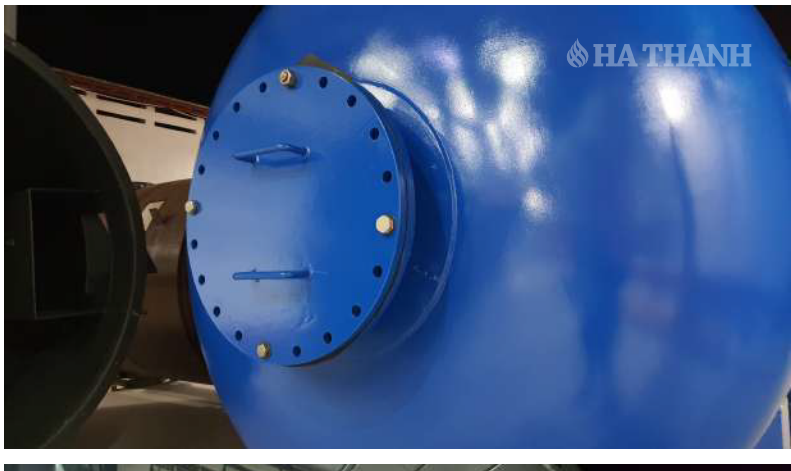
Witnesses inspection with customer and handover.

Rubber Lining for MCW Piping Systems

(Matarbari Coal-Fire Power Plant)

Rubber Lining for WWT Vessel System

Rubber Lining HCL Tank for Acid Plant



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

HA THANH

a Rubber & Flake lining industry company

R.24-7, Floor 24, Victory Tower, Phu My Hung
No. 12 Tan Trao Str., Tan Phu Ward, Dist 7, Ho Chi Minh City
Tel & Hotline: +84 28 5413 8661 | 09877 01877
Mobile: +84 909 927 826
Email: sales@hathanhcorp.com
https://htic-rubber.vn