JINING XUNDA PIPE COATING MATERIALS CO.,LTD

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1、Company Profile

About Us

- ***Xunda Groups:***

Jining Xunda Pipe Coating Materials CO.,Ltd

Shandong Xunda Science Technology CO.,Ltd

Shandong Xunda Anticorrosion Heat-Shirnkable Technology CO.,Ltd

We are the most largest manufacturers of Polyethylene Tape for the Corrosion Control of pipelines and specialty applications. A joint-stock enterprise, possessing a gross investment of RMB 42 million, registered capital of RMB 10 million.

- *A Global company supplying Polyethylene Coating Systems to the corrosion industry within the oil, gas and water pipeline construction industry for both onshore and offshore applications.*
- *A manufacturer of standard and specialty products.*
- *High-quality anti-corrosion systems providing anti-corrosion solutions for oil pipelines, natural gas, chemicals and water transmission and distribution pipelines, etc.*
- *Global supplier of PE corrosion system for metallic pipelines*

Industries that We Serve

- *Oil, Gas and Water Transmission pipeline market*
- *Oil and Gas distribution and utility markets*
- *New pipeline construction markets*
- *Rehabilitation and Reconditioning market*
- *Offshore Industry*
- *Refinery and Petrochemical Plant Industry*
- *Manufacture of Polyethylene coatings utilizing Butyl based elastomeric adhesives, Polyethylene films and liquid adhesives for corrosion protection of steel pipe.*
- *Provides corrosion protection with the inherent chemistry of Polyethylene and Butyl Adhesive for resistance to water and oxygen penetration. Oxygen and Water are prevented from reaching the metal substrate, which are necessary and sufficient conditions for corrosion.*
- *Manufacture of conventional and specialty Polyethylene, Polypropylene and Polymeric Alloys and coating systems for pipe corrosion protection.*
- *Manufactures PE coatings systems for applications for New Pipe Construction and Rehabilitation and Reconditioning*
- *Approved to ISO 9001 and to other good manufacturing and technical standards and norms governed within the energy and pipeline industry.*
- *Coating systems that have a broad range of temperature and shear resistance properties to meet the requirements of the pipeline and end-user.*

Key Advantages

- *10 years of pipeline coating experience*
- *Global presence in oil, gas and water industries*
- *Total manufacturer of Polyethylene, Polypropylene coating systems*
- *Innovative coatings, high temperature systems and niche coatings with first quality products*
- *Multiple coating systems to meet end-user applications and requirements*
- *Broad range of products to meet pipeline requirements*
- *Tailor made products to specific application on demand by the end-user*
- *High Quality products through innovative technology, manufacturing methodologies and first quality raw materials*
- *ISO approved manufacturing protocol*
- *Xunda products and coating systems approved to ASTM and other standards*
- *Standard manufacturing methodologies*
- *State of the art quality control/assurance procedures and protocol*
- *Technology/R&D programs for new products and new processes*
- *Adaptable to manufacturing specific request within short time frames*
- *Proven long-term performance and corrosion protection on operating pipelines*
- *Coating applied in plant and over-the-ditch*
- *Easy of application, consistent application and lower costs*
- *Compatible with traditional and current corrosion coatings*
- *Technical support*
- *Just-in-Time delivery on a global basis*
- *Achieving and exceeding Client requirements for products, packaging and shipment expectations*
- *Meetings all International and In-Country transportation requirements*
- *Girth weld coating applied in Bell-hole or out of the ditch*

Type of Products/ Services Offered

- *Anticorrosion and Mechanical Protection Tape-2ply & 3ply*
- *Primers*
- *Fillers*
- *Wrapping Machines*
- *Technical Assistance*
- *Coatings for the joint*
- *Special products*
- *Heat Shrink Tubular/wraparound sleeves*

Tape Coating Systems

- *Line travel, over-the-ditch coatings and application*
- *Can be applied with a powered wrappers*
- *Can be used for new pipeline construction*
- *Can be used for pipeline rehabilitation/reconditionin*
- *Used in the oil, gas and water pipeline industry*
- *Offshore and Refinery coatings*

Functionality to a Coating System

- *High adhesion strength*
- *High shear resistance and shear strength*
- *Cathodic disbonding resistance*
- *Dielectric strength and electrical resistance*
- *Resistance to impact and penetration forces and stresses*
- *Stable to thermal and hydrolytic environments*
- *Long term performance stability*
- *Compatible with cathodic protection*
- *(Resistant to UV radiation*
- *Mechanical protection*

Manufacturing Technology

- *Calendering process for the lamination of the tape and outer-wrap produce*
- *Calenering 2 Ply and 3 Ply Polyethylene tape systems within Xunda's manufacturing facility using vertical integration of resources*
- *Slitting on site for the various sizes of products to meet application requirements*
- *Packaging on site with specified packaging specification*
- *Polyethylene blending of Polyolefin resins to meet client and end-user requirements*
- *Manufacture to int'l and specific client standards and norms manufacture*

Features to the Client & Industry

- *Major global Polyethylene tape manufacture*
- *Vertical integration of our process and products*
- *Project management*
- *Products approved by most int'l standards*
- *2 Ply and 3 Ply calendered tape system*
- *Specific high shear coatings*
- *Proven long term performance on a global basis*
- *Active technology efforts to obtain certifications, approvals and working with our clients for specific applications*

Approvals by Int'l Standards

- *DIN 30672*
- *EN Standards*
- *ASTM Test Methods*
- *American Water Standards (AWWA) C 209 & 214*
- *Indonesian Standards (PERTAMINA)*
- *Iran Standards-NIGC & IGS*
- *China Standards*

2、Polyethylene Anti-corrosion Tapes (T 100)

I Description:

The T100 series is Cold applied tape coating system for corrosion protection of Oil, Gas, Petrochemical, and Waste Water underground or overhead pipelines.

The **inner-layer tape** shall be applied after the primer and before the outer-layer tape by hand or with a wrapping machine

Ⅱ Structure

The specification of the tape consists of two layers, adhesive layer and film backing

Adhesive: butyl rubber

Outer layer: Special blend of stabilized polyethylene

III Features

Excellent adhesion to pipe and self

Resistant to UV

Can be applied over a wide temperature range

Good conformability and consistent uniform thickness

Easily applied with no special equipment

Compatible with common pipe coatings

Excellent resistance to cathodic disbonding

Meets ASTM D 1000 Standard

Cold applied

Ⅳ Technical datas:

INNER WRAP TAPE: XUNDA-T 100 Series

Type	T-150	T-165	T-180
Total thickness	0.51 mm	0.65 mm	0.80 mm
Polyethylene Film	0.31 mm	0.34 mm	0.39 mm
Synthetic Adhesive	0.20 mm	0.31 mm	0.41 mm
Elongation at Break		≥ 400%	
Tensile Strength	60 N/cm	61.2 N/cm	63 N/cm
Yield Strength	35.5 N/cm	42.3 N/cm	45.5 N/cm
Peel Adhesion to Primed Pipe	21.2 N/cm	26.5 N/cm	33.2 N/cm
Dielectric Strength	35 KV/mm	45.8 KV/mm	48 KV/mm
Cathodic Disbandment		0.24 in radius 6.4 mm	
Volume Resistivity		2.5×10^{12} ohm.m	
Water Vapor Transmission Rate		≤ 0.1gm/M^2/24h	
Water Absorption Rate		< 0.06%	
Recommended Application Temperature		-5 to +60^0 C	
Max Serve Temperature		-40 to + 80^0 C	
Color		Black	
Available Roll Size (width x length)		2" to 9" X 50 to800 feet	

3、Polyethylene Protective Tapes (T 200)

I Description

The T200 series is Cold applied tape coating system for corrosion protection of Oil, Gas, Petrochemical, and Waste Water underground or overhead pipelines. The outer-layer tape backing shall be compounded so that it will be resistance to outdoor weathering.

The **outer-layer tape** shall be applied after the inner-layer tape by hand or with a wrapping machine.

II Structure

The specification of the tape consists of two layers, adhesive layer and film backing

Adhesive: butyl rubber

Outer layer: Special blend of stabilized polyethylene

III Features:

Excellent adhesion to inner-layer tape and self

Resistant to UV

Can be applied over a wide temperature range

Good conformability and consistent uniform thickness

Easily applied with no special equipment

Compatible with common pipe coatings

Excellent resistance to cathodic disbonding

Meets ASTM D 1000 Standard

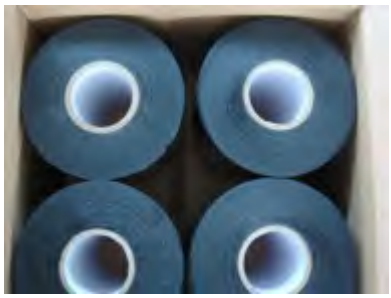
Cold applied

ⅣTechnical data:

OUTER WRAP TAPE: XUNDA-T200 Series

Type	T 250	T 265	T 280
Total thickness	0.51 mm	0.65 mm	0.80 mm
Film	0.38 mm	0.51 mm	0.63 mm
Adhesive	0.13 mm	0.14 mm	0.17 mm
Elongation at Break		≥ 400%	
Tensile Strength	45.3 N/cm	50.8 N/cm	60.1 N/cm
Yield Strength	35.9 N/cm	43.4 N/cm	45.8 N/cm
Dielectric Breakdown	32.9 KV/mm	43.5 KV/mm	45.2 KV/mm
Cathodic Disbandment		0.24 in radius 6.4 mm	
Volume Resistivity		2.5×10^{12} ohm.m	
Water Vapor Transmission Rate		≤ 0.08 gm/M^2/24h	
Water Absorption Rate		< 0.07%	
Recommended Application Temperature		-5^0 to $+60^0$ C	
Color		White	
Available Roll Size (width x length)		2" to 9" X 50 to 600 feet	

4、Polyethylene Joint Tape（T 300 ）



I Description

The T300 series is Cold applied tape coating system for anti corrosion of field joints,fittings, and specifically pipeing. The adhesive is a key in ground performance characteristic coupled with the low and high density polyethylene backing.

The **Joint wrap tape** shall be applied by hand or with a wrapping machine.

II Structure

The specification of the tape consists of two layers, adhesive layer and film backing

Adhesive: butyl rubber

Outer layer: Special blend of stabilized polyethylene

III Features:

Heavy duty adhesive

Resistant to UV

Can be applied over a wide temperature range

Good conformability and consistent uniform thickness

Easily applied with no special equipment

Conformable to irregular shapes.

Meets ASTM D 1000 Standard

Cold applied

Ⅳ Technical data:

Item	T-365	T-380	T-3100	T-3130
Total thickness (mm)	0.64	0.76	1.02	1.27
Backing thickness (mm)	0.28	0.30	0.178	0.50
Adhesive thickness (mm)	0.36	0.46	0.942	0.77
Tensile strength (N/ cm)	≥45	≥60	≥80	≥100
Elongation (%)	≥400	≥450	≥450	≥500
Adhesion to Prime Pipe (N/cm)	≥25		≥35	
Dielectric Strength (KV/cm)	≥40	42	42.5	45
Volume Resistivity (Ω.m)	$\geq 2.5\times10^{12}$	$\geq 2.5\times10^{12}$	$\geq 2.5\times10^{12}$	$\geq 2.5\times10^{12}$
Water Vapor Transmission Rate （24h）g/㎡	≤0.1	≤0.1	≤0.1	≤0.1
Water Absorptivity (%)	≤0.1	≤0.1	≤0.1	≤0.1
UV Resistance 600h	≥80 %	≥80 %	≥80 %	≥80 %
Application Temperature	-5 to 80 ^{0} C			
Max Serve Temperature	-40 to 85 ℃			
Cathodic Disbonding at 23 ℃	13mm			

5、Polyethylene 3ply Tape（T 400 ）

I Description

TheT400 series is Cold applied tape coating system for corrosion protectior of Oil, Gas, Petrochemical, and Waste Water underground or overheac pipelines. It is a three-ply cold applied tape with stabilised polyethylene bckinç and butyl rubber adhesive layers on both sides.It is also used as inner-layeı tape. It shall be applied by hand or with a wrapping machine

Ⅱ Features:

Excellent bonding between adhesive and carrier film via co-extruded intermediate layer.
Mechanically highly resistant tape system.
Practically impermeable to water vapour and oxygen.
Resistant to soil bacterial and soil electrolyte.
Compatible with coating from PE,PP,FBE,PU,CTE and Bitumen and ext… .
A Total Coating System with:

- High adhesion and shear resistance
- Resistance to corrosion disbondment
- High electrical resistance
- High dielectric strength
- High corrosion protection for steel substrates

III Technical data

PROPERTIES	UNIT	T 480	T 4100	TEST METHOD
Color Carrie film Adhesive inner layer Adhesive outer layer	--	black(grey/green) black black	black(grey/green) black blac	--
Thickness Carrie film Internal Adhesive External Ahesive	mm mm mm	0.3 0.34 0.16	0.3 0.45 0.25	ASTM D 1000
Tensile strength	N/cm	67	70	ASTMD1000
Elongation at break	%	450	500	ASTMD1000
Peel strength to pipe surface at 23 ℃ at 50℃	N/cm	 18 1.3	 20 1.5	EN 12068 Annex C
Peel strength tape to tape at 23 ℃ at 50℃	N/cm	 25 3.5	 30 4.0	EN 12068 Annex B
Dielectric strength	Kv/mm	32	33.8	ASTMD149
Insulation Resistance	Ohm.m²	10^{12}	10^{12}	EN 12068
Water Vapor Transmission	g/ m2 /24h	0.1	0.1	ASTM E 96
Brittleness temperature	℃	-46±4	-46±4	DIN53372
Water Absorption	%	0.1 max	0.1 max	ASTM D 570
Impact resistance at 23°	J	18	18	EN 12068
Cathodic disbandment at 23°c at 50°c	mm	15 30	15 30	 EN 12068

Lap shear strength at 50℃	N/mm2	0.05	0.05	EN 12068

Ⅳ. TAPE - INNERWRAP - CORROSION PROTECTION TAPE

Asymmetrically structured three-ply plastics tape consisting of a stabilized polyethylene backing with plastic butyl rubber on **both** sides. The consistency of the butyl rubber on the **one** side facing the pipe surface should be formulated in such a way that, under tension, it flows on uneven steel surfaces. To facilitate correct application this butyl layer should be of a **black color**. The grey butyl layer of the tape must face the steel and this should always be the thicker layer of butyl rubber.
In order to avoid delaminating tape must contain co-extruded intermediate layers.

The tape must be fully compatible with the properties of the primer. The tape must be self-amalgamating between the layers and at the overlaps and must have a release paper or film.

Ⅴ. TAPE ROLL SIZES

a) **Hand application** roll **core diameter 41 mm**
Tape length 15 m
Tape widths 50 and 100 mm

b) Application with **hand wrapping machi**ne, roll **core diameter 41 mm**
Tape length 15 m
Tape widths 50 and 100 mm

c) Application with **hand wrapping machine**, roll **core diameter 78 mm**
Tape length depending on pipe diameter
Tape widths 100 and 150 mm

d) Application with **motor driven wrapping machine**, roll **core diameter 78 mm**
Tape length depending on pipe diameter
Tape widths 100 and 150 mm

Ⅵ. TAPE - OUTERWRAP - MECHANICAL PROTECTION TAPE

Two-ply plastics tape consisting of a stabilized high density polyethylene backing with plastic butyl rubber on **one** side. The outer wrap tape must be fully compatible with the properties of the inner wrap. The outer wrap must fully self-amalgamate with the inner wrap tape at contact areas.
In order to avoid delaminating between carrier film and butyl rubber, tape should contain co-extruded intermediate layers.

Ⅶ. TAPE SYSTEM

Tape system shall comply with EN 12068 (stress-class C-50) and DIN 30672 (stress-class C-50).

Structure:

primer	compatible with inner wrap
inner wrap	2 layers (min. 50% overlap)
outer wrap	2 layers (min. 50% overlap)

Properties:

electrical insulation resistance (DIN 30672)	> 10^{10} Ohm · m^2
volume resistivity (ASTM-D 257)	> 10^{15} Ohm · cm
adhesion strength to steel (EN 12068, ASTM-D 1000)	
23°C, peel speed 10 mm/min	≥ 20 N/cm
50°C, peel speed 10 mm/min	≥ 2.0 N/cm
23°C, peel speed 100 mm/min	≥ 40 N/cm
50°C, peel speed 100 mm/min	≥ 4.0 N/cm
adhesion strength tape-to-tape (EN 12068, ASTM-D 1000)	
23°C, peel speed 100 mm/min	≥ 40 N/cm
50°C, peel speed 100 mm/min	≥ 4.0 N/cm
Indentation resistance (EN 12068) at 50°C	≥ 1.0 mm
residual thickness at rod load 10 N/mm^2 (Rod-∅ 1,8 mm)	
impact resistance	
EN 12068	≥ 15 J
ASTM-G 14	≥ 9 J
lap shear resistance at 50°C (EN 12068)	≥ 5 N / cm^2

WRAPPING MACHINES

To apply hand rolls with a 41 mm core diameter. - as per a), the hand wrapping machines must be able to automatically remove the release film from the three - ply tape during application, maintain constant overlap and tape tension.

To apply rolls with **78 mm plastics roll core** diameter - as per c) and d) a sufficient quantity of wrapping machines must be quoted. These machines must be able to automatically remove the release film from the inner wrap tape, maintain constant overlap and give the necessary tape tension.

6、Polyethylene butyl bitumen tape (T 600)

I Description

The T600 series is Cold applied tape coating system for corrosion protection of Oil, Gas, Petrochemical, Waste Water underground or overhead pipelines and waterproofing.

The **Bitumen tape** shall be applied after the primer by hand or with a wrapping machine

II Structure

The specification of the tape consists of three layers,

Backing:Special blend of stabilized polyolefines

Adhesive:Butyl rubber Bituminous Compound and Adhesion Promoting Resins

Interleaf:Anti adhesive Film Treated with Silicone

III Features:

_ Heavy duty butyl bitumen compound adhesive
_ Excellent adhesion to pipe and self
_ Flexibility provides extra protection at vulnerable areas
_ Excellent conformability and consistent uniform thickness
_ Easily applied with no special equipment
_ Compatible with common pipe coatings
_ Excellent resistance to cathodic disbonding
_ Resistant to UV
_ Can be applied over a wide temperature range
_ Good conformability and consistent uniform thickness
_ Cold applied

Ⅳ Technical datas:

PHYSICAL PROPERPTIES	UNIT	TEST METHOD	TYPICAL VALUES			
Total thickness	mil	ASTM D 1000	40mils	50mils	60mils	65mils
Tensile Strength	lb/in	ASTM D 1000	30(5kg/cm)	35(6.3kg/cm)	39(7kg/cm)	42(7.5kg/cm)
Elongation	%	ASTM D 1000	400	400	450	500
Length			25mtrs	20mtrs	15mtrs	10mtrs
Width			2 “,4”,6”,9”			
Peel adhesion To primed pipe	oz/in	ASTM D 1000	269(3kg/cm)	296(3.3kg/cm)	314 (3.5kg/cm)	340(3.8kg/cm)
To backing	oz/in	ASTM D 1000	90(1kg/cm)	90(1kg/cm)	117(1.3kg/cm)	135(1.5kg/cm)
Dielectric Strength	KV/mm	ASTM D 1000	47	45.6	46	47.8
Volume Resistivity	ohm·m	ASTM D 257	2.5 X 10^{12}	2.5 X 10^{12}	2.5 X 10^{12}	2.5 X 10^{12}
Water Vapor Transmission Rate	g/ m2 /24h	ASTM E 96	0.03	0.03	0.03	0.02
Water Absorptivity	%	ASTM D 570	0.1	0.1	0.1	0.1
Application Temperature	°F		-31-+160 (-35-+80℃)			
Max service temperature	°F		-40-+176 (-40-+85℃)			

7、Polypropylene mesh membrane tape (T 500)

Ⅰ Description

The T 500 is cold applied tape for both metallic pipelines and waterproofing works against outdoor bad weathers .

Ⅱ Structures

Backing : PP woven fabric cloth,

Adhesive layer: Butyl rubber Bituminous Compound

Ⅲ Uses

Waterproofing-

-Waterproofing membrane for basements,substructures and flat deck applications. plazas, bridge, vehicular traffic structures, or parking decks overlaid with an asphalt concrete wearing course.

-Tough, high performance waterproof membrane for critical substructures and civil engineering works.

-Provides a vapor and waterproof membrane to water excluding structures and protects concrete from attack by aggressive ground salts.

-Protection for wall ,floor, roof, corner, basement etc. to against from attack by bad weather, rain, acid alkaline salt

Pipelines protection

_ Weld joints

_ Bends

_ Fittings

_ Bare pipe lengths

_ Pipe rehab and repair

-Bare pipe length

Ⅳ Features

Waterproofing-

-Cold applied.

-High resistance to bad weather environment

-Good performance itself to keep dry

-Easily application &installation.

-Suitable for a wide range of temperatures

- Compatible primers

-Safe,clean

Pipes protection

_ Cold applied

_ Excellent self adhesion to pipe

_ Flexibility provides extra protection at vulnerable areas

_ Excellent conformability and consistent uniform thickness

_ Easily applied with no special equipment

_ Compatible with common pipe coatings

_ Excellent resistance to cathodic disbonding

Ⅴ Technical Data

PHYSICAL PROPERPTIES	UNIT	TEST METHOD	TYPICAL VALUES			
Total thickness	mil	ASTM D 1000	40mils	50mils	60mils	65mils
Tensile Strength	lb/in	ASTM D 1000	30(5kg/cm)	35(6.3kg/cm)	39(7kg/cm)	42(7.5kg/cm)
Length			25mtrs	20mtrs	15mtrs	10mtrs
Width			2 “,4”,6”,9”			
Peel adhesion To primed pipe	oz/in	ASTM D 1000	269(3kg/cm)	296(3.3kg/cm)	314 (3.5kg/cm)	340(3.8kg/cm)
To backing	oz/in	ASTM D 1000	90(1kg/cm)	90(1kg/cm)	117(1.3kg/cm)	135(1.5kg/cm)
Dielectric Strength	KV/mm	ASTM D 1000	42	42.6	43	43.8
Volume Resistivity	ohm·m	ASTM D 257	2.5×10^{12}	2.5×10^{12}	2.5×10^{12}	2.5×10^{12}
Water Vapor Transmission Rate	g/ m2 /24h	ASTM E 96	0.06	0.05	0.03	0.02
Water Absorptivity	%	ASTM D 570	0.1	0.1	0.1	0.1
Application Temperature	°F		-31-+160 (-35-+70℃)			
Max service temperature	°F		-40-+176 (-40-+80℃)			

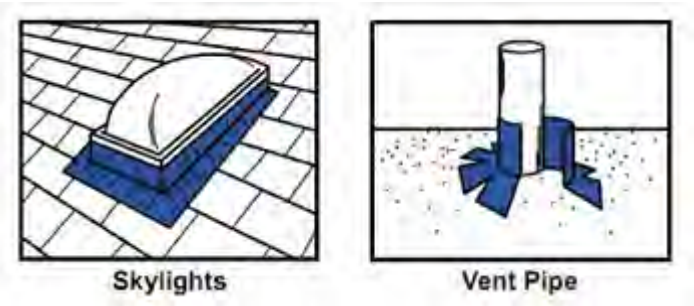
8、Alu Flashing Tape (T 700)

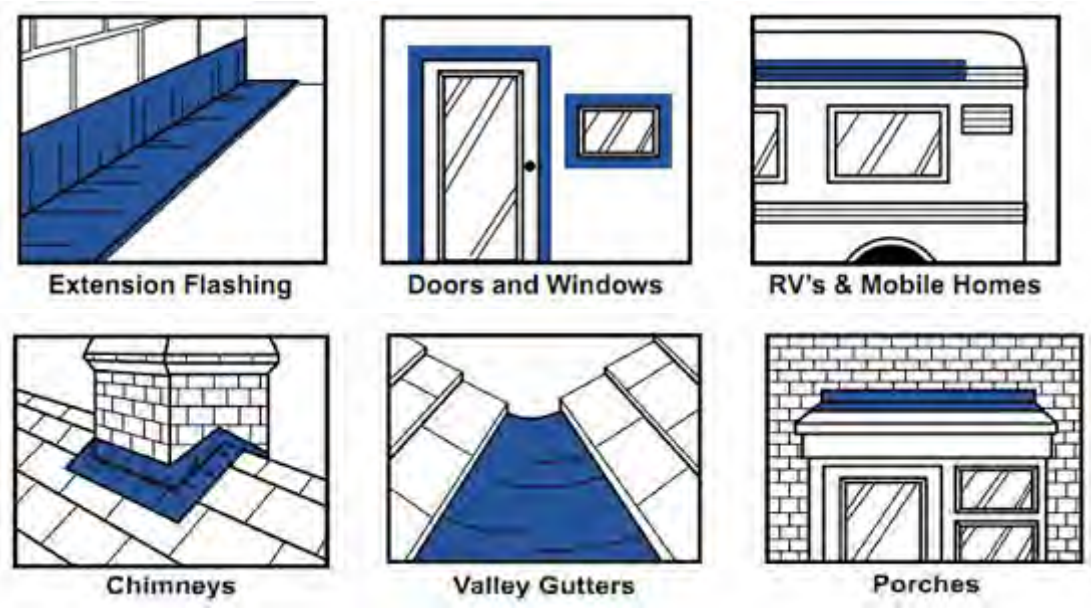
Ⅰ DESCRIPTION

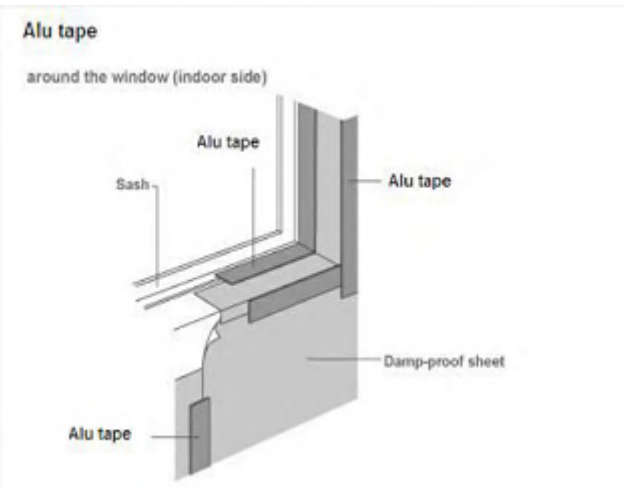
A cold applied self adhesive aluminium backed flashing in tape form.

Ⅱ USES

Window and door openings (headers, sills,jambs, thresholds, nailing flanges)
Deck-to-wall intersections
Corner boards
Wall-to-wall tie-ins
Foundation sill plates
Sheathing panel seams
Under stucco finishes
Masonry walls
Roof detail areas
Gutters
Mobile home repair
Other building joints.
Exposed pipelines protection.







Ⅲ COMPOSITION

High melting point polymer bitumen adhesive laminated to a 30-70 micron aluminium. The adhesive surface is protected by a release coated plastics film which is discarded during use.

ⅣFeatures

Easy application-Installations fast and easy—simply remove the release film and press onto the substrate.
Superior adhesion capabilities-Creates a strong bond to the substrate for long-lasting waterproofing Protection.
Excellent sealing performance-The specially formulated rubberized asphalt adhesive seals around fasteners, allowing no water to penetrate and get to the substrate.
Highly conformable and flexible-Can accommodate settlement and shrinkage movement.
Long-lasting waterproofing protection-Both the aluminum surfaced polyethylene film and pure alu surface with the specially-formulated rubberized asphalt components create a water and moisture barrier that does not degrade from the effects of the environment.

ⅤTechnical Data:

Properties	TYPICAL VALUES	UNIT
Carrier film	Aluminum surfaced HDPE or Pure Aluminum	
Adhesive	Rubberized asphalt	
Release liner	Anti adhesive Film Treated with Silicone	
Adhesion	30	N/cm
Breaking Strength	40	N/cm
Moisture absorption	0.02	%
Temperature range For application For maximum service	 5 to 50 93	ºC
Tensile Strength	11.0 0.2	b/in kg/mm
UV resistance	Excellent	--
Roll of Thickness	0.8mm,1.0mm,1.2mm,1.27mm,1.4mm,1.5mm,1.65mm,2.0mm	
Width	5cm,7.5cm,10cm,15cm,20cm,30cm,40cm,50cm…80cm	
Length	50m,20m,15m,10m,5m	
RECOMMENDED PRIMER	Flashing Tape Primer	

9、Hot Applied Shrinkable Tape(T800)

I System description:

The XUNDA-T 800 is a hand wrapped heat shrinkable tape designed for corrosion protection of straight pipes, fittings, bends, elbows and other irregular configurations.. When heated the backing layer shrinks and the adhesive flows and forms a reliable corrosion protection seal onto metal and adjacent coating surfaces.

The **Polyethylene Heat shrinkable Tape** needs no primer nor patch closure and reduces application time and labor costs.

II Structure

The specification of the tape consists of three layers,
Adhesive: butyl rubber based hot melt adhesive
Film backing: Radiation cross linked polyethylene
Interleaf:Anti adhesive Film Treated with Silicone

III Features

After heating, formed corrosion protection seal
Strong backing provides outstanding waterproofing effect
High chemical resistance. resists impact, abrasion and ultraviolet light.
Excellent resistance against cathodic disbondment, dielectric breakdown.
Simple Application

IV Physical Properties

- Product Data Sheet Total Thickness:40mil, 50 mil,60 mil ,65 mils.
- Width:50,100,150,300,400,500,800 mm
- Length: 10 m
- Tensile Strength:35 N/cm
- Elongation:400%
- Adhesion Strength to pipe:30 N/cm
- Application temperature: -10 -60 ℃
- Temperature resistance:-50 ℃ - 80℃
- Shelf Life: 12 months

V Application

No Special skills, equipments, patch closure nor primer are needed. Its superior flexibility provides easy and reliable application for irregular configurations of fittings, bends and elbows and small diameter of straight pipes.

Wrap spirally the tape over foreign matters-free and preheated surface, beginning at least 25~50mm (1~2) onto pipe coating. Wrap the tape with enough tension to obtain conformability

and with minimum 50% of overlapping, while removing the release liner. Warm the end part of the tape and press down firmly. Using a torch, start at the edge of the tape and heat circumferentially around the coated pipe.

Finish off by heating over the entire tape vertically to ensure a uniform adhesion and by using a roller or gloved hands to remove wrinkle and air.

10、Primer coating (P19&27)

Ⅰ Description:

The Liquid adhesive is recommended for use with only Xunda coating systems. The Liquid adhesive consist of a mixture of butyl rubber and synthetic compound and a solvent-gasoline. The Liquid adhesive is quickly drying applied to the appropriately prepared pipe surface before application of inner layer tape. The function of Liquid adhesive is to provide a bonding medium between the pipe surface and the inner layer tape. It is suitable for hand brush or machine spray application. It can be applied by hand or machine.

Hand-application : app. 0,2 liter/m² pipe surface
Machine application: app. 0,1 liter/m² pipe surface

Ⅱ Features:

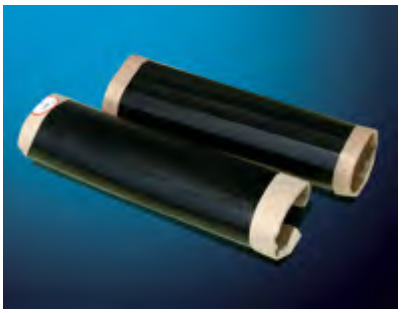
Heavy duty adhesive
Quick Dry
Conformable to irregular pipe
Compatible with general coating system

Ⅲ Technical Datas:

Properties	Unit	P19	P27
Solid content	%	19	27
Density	Kg/liter	0.77	0.87
Viscosity+23℃ (out flow time,4mm nozzle)	sec	40±5	40±5
Flash point	℃	14	15
Drying time	min	5-10	5-10
Color		black	black
Application temperature	℃	5 to 50	5 to 50
Maxinum temperature	℃	-40 to 80	-40 to 80
Package	15/20/200Liter per drum		

11、Polyethylene Heat Shrink Sleeves（HHS）

I Product Description



Radiation Cross linked Polyethylene Anticorrosion Heat Shrinkable Sleeve (a kind of joint wrap sleeve, used before the pipeline is welded) is on-site joint wrap sleeve, made of three layers, namely the inner layer is binary solvent free epoxy primer, the middle layer is hot-melt adhesive, the outer layer (backing material) is specially modified radiation cross linked PE. The two-layer sleeve bears no primer. The sleeve is specially designed for the on-site joint reparation and bend anticorrosion project of the underground long-distance pipeline and other purpose.

II Specification

Serial No.	Model No.	I.D. of as Supply	I.D. of after Recovered	Length	Pipe Diameter
1	SXR 100/45/500	100	45	500	φ 57
2	SXR 130/60/500	130	60	500	φ 76/89
3	SXR 155/75/500	155	75	500	φ 108/114
4	SXR 210/100/500	210	100	500	φ 159
5	SXR 220/100/500	220	100	500	φ 168
6	SXR 270/130/500	270	130	500	φ 219
7	SXR 290/140/550	290	140	550	φ 245
8	SXR 320/150/550	320	150	550	φ 273
9	SXR 50/170/550	350	170	550	φ 299
10	SXR 375/180/550	375	180	550	φ 325
11	SXR 410/200/500	410	200	550	φ 351
12	SXR 440/210/600	440	210	600	φ 377
13	SXR 537/260/600	537	260	600	φ 457
14	SXR 595/280/600	595	280	600	φ 529
15	SXR 700/330/600	700	330	600	φ 630
16	SXR 800/380/600	800	380	600	φ 720
17	SXR 1600/800/600	1600	800	600	φ 1200
18	SXR 2000/800/600	2000	800	600	φ 1600

III Property and Advantages

The product is joint less sleeve, with a shrinkage ≥50%. It is mainly used in anticorrosion of the joint of the pipe, the sealing of concentric reducer and valve. The heat shrinkable sleeve has a layer of hot-melt adhesive of super bonding ability ,which can bond with the bottom layer of the pipe and the coating layer of PE,PP, epoxy powder, and epoxy coal pitch to produce effective sealing protection.

1.**Great Compatibility to the Pipe Coating**

The product is applied to the anticorrosion coating of all types of pipes such as:2PE, 3PE, 3PP, FBE, insulation jacket, coal tar enamel, and petroleum asphalt. It has been used widely in the joint anticorrosion works, the plugging of the big end, and the sealing of the valve on the pipelining site with satisfactory effect, which has been proved in many pipe works.

2.Strong Creep and Aging Resistance

Used together with high quality hot-melt adhesive and primer, the product of our company is able to adapt to different kind of operating temperature , with strong creep resistance and a service life as long as that of the pipe.

3.Outstanding Waterproof Sealing

Composed of hot-melt adhesive of excellent performance, radiation cross linked PE and solventliss epoxy primer, the product has excellent property of anticorrosion, quick contraction, sealing and waterproof.

4. Strong Adaptability on Site

The heat shrinkable sleeve of special structure has a high shrinkage (≥50%), strong shear resistance and peel strength which enables it to be used in the sealing of the joint, concentric reducer, or the plugging of the crossing ends. Because of it performs well in the sealing, it is widely used.

5. Timesaving and Laborsaving Installment

The product is easy and convenient to use, thus it can ensure the quality of the installment. Because the size of the sleeve of special structure changes greatly after it shrunk, compared with that before the shrinking, the installation personnel can observe whether it is properly installed by visual inspection. The productivity is thus greatly promoted because of the quick, easy and convenient installment.

6. Low Preheating Temperature

Adoption of the new material and craft extends the application range of the product in on-site joint anticorrosion. Our company has solvent free epoxy primer of super adaptability which can be applied in coating the joint at the preheating temperature of 55℃-60℃. This enables the product to be used promptly with strong peeling strength, making the operation more convenient.

7. Primer Packaging

In order to make the site operation more convenient, our company has offered matching packaging for the epoxy primer to ensure the quality of the operation.

12、Heat Shrink Wraparound Sleeves（HHWS）

The product is lap joint, normally applied after the line welding.

1) Structural Description

The on-site joint wrap tape is made of three layers, namely the inner layer is binary solvent free epoxy primer, the middle layer is hot-melt adhesive, the outer layer (backing material) is radiation cross linked PE. The two-layer tape bears no primer.

2) Specification

Proper Pipe Diameter	Backing Material	Adhesive
≤ 400	≥ 1.2	≥ 0.8
＞ 400	≥ 1.5	

3) Property and Advantages

The product is heat shrinkable patch (normally named as lapping or open heat shrinkage patch) with shrinkable ≥15%m and a stator, which is usually applied to repair the large-scale damage or defect of the duct joint or anticorrosion layer.

Great Compatibility to the Pipe Coating

The product is applied to the anticorrosion coating of all types of pipes such as:2PE, 3PE, 3PP, FBE, insulation jacket, coal tar enamel, and petroleum asphalt. It has been used widely in the joint anticorrosion works on the pipelining site with satisfactory effect, which has been proved in many pipe works.

Strong Creep and Aging Resistance

Used together with high quality hot-melt adhesive and primer, the product of our company is able to adapt to different kind of operating temperature , with strong creep resistance and a service life as long as that of the pipe.

Low Preheating Temperature

Adoption of the new material and technology extends the application range of the product in on-site joint anticorrosion. Our company has solvent free epoxy primer of super adaptability which can be applied in coating the joint at the preheating temperature of 55℃-60℃. This enables the product to be used promptly with strong peeling strength, making the operation more convenient.

Constant Super Qualities and Property Ensured by New Material, New Craftsmanship, New Technology

Our company emphasizes application of high-tech, persisting in self-improving, adopting new material, new craftsmanship and new technology, which has ensured the constant good qualities and property of the product. When the fire moved around the tape to heat it(the flame should cover the stator), after fixing the stator on the tape, “bonding without adhesive” and new type stator, enable CEP-4 tape to ensure no creeping occurring at the lap joint of the end and head of the heat shrink tape, and the complete melting of the joint hot-melt adhesive(making the layer under the lap joint namely the adhesive attached to the steel pipe soft and sticking so as to produce anticorrosion effect). This way the quality of the installment is greatly improved, meanwhile the bonding of the adhesive at the joint is further improved, which is obvious in a wide range of temperature. The shearing resistance is also strengthened. As a result, the anticorrosion quality at the pipe joint

will be more reliable.

Outstanding Waterproof Sealing

Composed of hot-melt adhesive, radiation cross linked PE and solventliss epoxy primer, the product has excellent property of anticorrosion, quick contraction, sealing, waterproof, acid proof, and chemical corrosion resistance.

Strong Adaptability on Site

Our company is able to provide reeled heat shrinkable tape for pipe works of different pipe diameter. The tape can be cut at will according to the diameter of the pipe, which helps a lot in reducing the inventory cost and the input cost of the work and thus convenience the engineering management.

Primer Packaging

In order to make the site operation more convenient, our company has offered matching packaging for the epoxy primer to ensure the quality of the operation.

4）**Performance Index**

No.	Item		Performance	Test Procedure	Name
1	Tensile Strength (Mpa)		≥ 17	GB/T 1040	Backing Material Property
2	Elongation (%)		≥ 400	GB/T 1040	
3	Vicat Softening Point (°C)		≥ 90	GB/T 1633	
4	Brittle Temperature (°C)		≤ -65	GB/T 5470	
5	Electric Strength (MV/m)		≥ 25	GB/T 1408.1	
6	Volume Resistivity (Ω .m)		≥ 1×10^{13}	GB/T 1410	
7	Environment Stress Cracking Resistance (F50)(h)		≥ 1000	GB/T 1842	
8	Chemical Mediator Corrosion Resistance (Steeping 7d)(%)	10%HCL	≥ 85	GB/T 1040	
		10%NaOH	≥ 85		
		10%NaCL	≥ 85		
9	Thermal Ant oxidation (150 °C ,168h)	Tensile Strength (Mpa)	≥ 14	GB/T 1040	
		Elongation (%)	≥ 300		
10	Adhesive Softening Point（Ring and Ball Test） (°C)		≥ 90	GB/T 1633-79	Contraction Sleeve (Tape)
11	Lap Shear Strength (23 °C) (Mpa)		≥ 1.0	GB/T 2792-81	
12	Brittle Temperature (°C)		≤ -15	GB/T 5470-85	
13	Peel Strength (Cohesive Failure) (N/cm)	Contraction Sleeve (Tape) / Steel	≥ 70	GB/T 2792	
		Contraction Sleeve (Tape)/ Epoxy Primer	≥ 70		
		Contraction Sleeve (Tape)/ PE layer	≥ 70		

13、Heat Shrink End Cap (HSC)

Water-proof Cap which is also called Heat Shrinkable Cap is the combination of hot-melt adhesive and the backing material of radiation cross linked PE.

I Function: It is mainly applied to the ends of the duct with foam jacket, connecting the internal jacket with the external jacket of the steel pipe, producing sealing, waterproof, anticorrosion protection against damage.

II Characteristics

1) It is convenient and efficient in application.
2) The hot-melt adhesive binds well with other anticorrosion layers, which enables it to be waterproof and airproof, and have natural–repair ability.
3) The product performs well in mechanical strength, temperature resistance, thermal ant oxidation, anticorrosion, and environment stress cracking resistance, therefore has a long service life.
4) It can also protect long-distance heat insulating material from damage and decay, so as to reduce heat loss, cost of repair and maintenance.

III Performance Index

1) Specification: 38-800pipe diameter (which can be manufactured as the customer desired).
2) Performance Index

Serial No.	Item		Unit	Technical Criteria	Test Method
1	Tensile Strength		Mpa	＞17	GB/T1040
2	Elongation		%	＞400	GB/T1040
3	Vicat Softening Point		℃	＞90	GB/T1633
4	Brittle Temperature		℃	＜-65	GB/T5470
5	Environment Stress Cracking Resistance Time（F50）		(h)	＞1000	GB/T1842
6	Electrical Breakdown Strength Resistance		MV/m	＞25	GB/T1408
7	Volume Resistivity		Ω.m	＞1×10	GB/T1410
8	Chemical Mediator Corrosion Resistance (Steeping 7d)	10% HCL	%	＞85	SY/T0413
		10%NaOH	%	＞85	SY/T0413
		3%Nacl	%	＞85	SY/T0413
9	Tensile Strength		Mpa	＞14	GB/T1040
10	Elongation		%	＞30	GB/T1040
11	Peel Strength N/cm	To Primer-coated Steel Pipe	N/cm	＞35	GB/T2792
		To PE layer	N/cm	＞35	GB/T2792

IV Transportation and Storage

The product should be packed with carton or woven bag, and kept away from strong pressure, insulation, rain, or harmful material such as grease and dissolvent. It has a storage period of18 moths provided it be stored in the cool and dry place, away from heat at the temperature of -1--35℃.

14、Epoxy Primer (HTEP)

I Description of the Product Structure

Solvent Free High Tensile Epoxy Coating employs the modified epoxy as the major film forming material, the reactive diluents flexibilizer to realize solventless, so as to reinforce the cohesion, chemical stability and mechanical property of the coat.

II Performance

Employment of the scaly filling can not only promote the mechanical property of the coat but also produce coat shielding effect and anticorrosion effect.

The matching firming agent of XDWHT is of low viscosity, which makes the coating harder, tougher and more anticorrosive and compact after it is solidified. The service life and solidifying period are also appropriate.

In addition to bearing the property of solvent epoxy coating such as fine insulativity ,super chemical stability , the coating has been highly promoted in cohesion, toughness, impact strength and peeling resistance strength .In the coating process, the dissolvent will not be vaporized , and the pinholes are avoidable. One filming can reach 200μ m above. As a result the coating can help greatly in saving energy and protecting the environment.

III Application

Since XDWHT excels in strength solid content, corrosion resistivity, simple coating procedure and environment protection, it is used extensively in major anti-corrosion places such as the city piping conservation, anti-corrosion construction inside and outside of underground piping, joint, connector bend, anticorrosion and large-scale repairing of the underground pipe.

IV XDWHE Performance Index

Serial No.	Test items		Unit	Technical Criteria	voluntary standards
1	Adhesion		Stage	≤ 2	GB/T1720
2	Flexibility		㎜	≤ 1	GB/T1731
3	Impact		J	≥ 4.9	GB/T1732
4	Hardness			≥ 0.60	GB/T1730
5	Surface Hardness		h	≤ 2	GB/T1728
6	Internal Hardness		H	≤ 16	GB/T1728
7	Fineness		μ m	≤ 80	GB/T1724
8	Appearance			Of all color, clean and smooth	GB/T1729
9	Solids Content		%	≥ 95	GB/T1725
10	Boiling Water Resistance		24h	pass	SY/T0447 Appendix E
11	Chemical Soaking Tolerance	10 % H 2 SO 4	72h	Unchanged	GB/T1763
		10 % NaOH	72h	Unchanged	
		3 % NaCl	72h	Unchanged	
12	Adhesion		Stage	≤ 2	SY/T0315 Appendix B
13	Cathodic Disbanding		㎜	≤ 10	SY/T0315 Appendix C
14	Impact Strength		J	≥ 12	Q/CD151
15	Counter Bending		3.0 o	Coat unchanged	Q/CD151
16	Coat Shear Strength		Mpa	≥ 15	SY/T0041
17	Electrical Breakdown Strength		MV/m	≥ 25	GB/T1408
18	Volume Resistivity		Ω .m	≥ 1×10	GB/T1410

V Coating

Surface Treatment: Treat the surface according to GB8923 until it reaches Sa2.5, then clear the dust on the steel tube surface. Coating Processing: TL-3 XDWHT is a kind of combined coating of Group A and Group B, and should be mixed according to certain proportion (A:B=100:20-25 which is adjustable according to the real environmental temperature) and complete the coating according to the prescribed time. In the process, brush coating, roller coating, doctor coating and bicomponent airless spray coater can be employed. The proper depth of the steel tube surface anchor stripe is desired to be 50-70μ m.

VI Coating Testing

Test should be carried out on the appearance, thickness, leak and adhesiveness of the anti corrosive coating. The surface is supposed to look like lacquer film, clean and sleek. The thickness should be tested with nondestructive thickness gage and leak detection checked with electric spark pinhole detection instrument under leaking detection voltage of 2000V. If the coating fails to pass thickness and leak test, further coating is demanded. And the adhesiveness should be tested according to epoxy coal tar coating standard.

15.Viscoelastic body adhesive tape

I: Viscoelastic body adhesive tape is a new research designed anti-corrosion products specifically for buried pipelines and other anti-corrosion equipment such as flanges, valves, pumps, and so on . Its construction to facilitate easy, excellent sealing property, long acting and environmental protection, is an ideal companion product for anti corrosion field.

Viscoelastic body adhesive with good property of cold flow and self-repair function: It is one kind of never cured viscoelastic polymer has special cold flow property,so it can achieve to self-repair and complete protection in anti-corrosion & repair processing .

Viscoelastic body adhesive tape has long acting Property : It could completely eliminate moisture intrusion, prevent corrosion from microorganisms, has good chemical resistance, and also never appear cathodic protection spalling, therefore it has a unique long-acting property

Viscoelastic body adhesive tape with excellent adhesive property: Strong adhesive acting,no need brushing primer ,without shedding、cracking、hardening.

Viscoelastic body adhesive tape construction to facilitate easy: Its easy to application ,without high requirement about surface treatment ,remove rusting by hand to St2 level to meet require ment .

Viscoelastic body adhesive tape is environmental protection :Material is completely environment ally friendly, cater to modern anti-corrosion design concept.

Its mainly used by the natural gas pipeline coating repair，3PE anticorrosion coating damage r epair, flanges, valves, pumps and other equipments protection

II : **Mating Material**

Viscoelastic body adhesive tape,Polyethylene tape ,Polypropylene reinforced fiber plastic, Aluminium foil tape

III :Performance Index

Item	Test Method	Performance
Color	Visual Estimation	Green,Blue,Black
Thickness	GB/T6672	≥1.8mm
Density	DIN 53479/NEN1183	1.2-1.6g/cm³
Application Temperature		- 45~ 75 ℃
Peel strength to steel 23℃	GB/T2792	≥ 5N/cm
Coverage Rate	Actual Estimation	≥95%
Peel strength to PE 23℃	GB/T2792	≥ 5N/cm

Coverage Rate	Actual Estimation	≥95%
Peel strength to steel -45℃	GB/T2792	≥ 5N/cm
Coverage Rate	Actual Estimation	≥95%
Shear strength to steel 23℃	GB/T 7124	≥0.02Mpa
Coverage Rate	Actual Estimation	≥95%
Shear strength to steel -45℃	GB/T 7124	≥1.0Mpa
Coverage Rate	Actual Estimation	≥95%
Include outside tapes indentation test	SY/T0315-G	≥15J
Cathodic disbanding resistant (1.5v,65℃, 30d)	SY/T0315-C	< 3mm
Drop Down (85℃)	Visual estimation	No dripping
Volume Resistivity	GB/T 1410	≥1x 10^{12}
Dielectric Strength ±23 ℃		>15kv/mm
Water Absorption	SY/T0414-B	≤ 0.03%Ω.m
Water Penetration	SY/T0414-B	<0.20%
Chemical resistant(90d,30%)	SY/T0315	No changes
Flexibility		No Cracking
Salt Spray Test (720hr,5%NACI,85℃)	ASTM B 117	No Corrosion

16、Production Equipments


迅大防腐
XUNDA
KAMBARA

17、Reference list

China mainland

Project Name	Product	Supply time	QTY（Ton）	Construction Unit
Sinopec International British Shell lubricants	Polyethylene tape&Primer	2006	40	Shanxi Equipment Installation CO.,
Yangzi Petrochemical Pipeline Project	Polyethylene tape&Primer	2006	29	Nanjing Insulation Engineering CO
Xinjiang Dushanzi one million tons of ethylene corrosion engineering	Polyethylene tape&Primer	2006	30	Urumqi,YICHENGXIN Technology Co., Ltd.
Zhanjiang Dongxing refinery expansion project	Polyethylene tape&Primer	2006	25	The fourth company of Sinopec
West-East gas stations	Polyethylene tape&Primer	2006	35	Henan special corrosion materials CO
Large oil refining project in Qingdao	Polyethylene tape&Primer	2007	42	Sinopec Ningbo Engineering Co., Ltd.
Sichuan Gas Transport to East	Polyethylene tape&Primer	2007	108	PetroChina Pipeline Company
Shengli Oilfield Transportation Engineering	Polyethylene tape&Primer	2005	110	Shengli Oilfield Company
Changqing Oilfield Gathering Project	Polyethylene tape&Primer	2005	35	The fourth company of Langfang Pipeline Bureau
Daqing Oilfield pipeline project	Polyethylene tape&Primer	2005	210	The third oil company of Daqing
Zhongyuan Oilfield pipeline project	Polyethylene tape&Primer	2005	40	Henan special corrosion materials CO
Jianfeng Chemical Engineering	Polyethylene tape&Primer	2006	45	Jianfeng Chemical Engineering
Jiangsu Taicang Shell oil projects uniform	Polyethylene tape&Primer	2006	38	Shanxi Equipment Installation CO
Drainage works in Huainan	Polyethylene tape&Primer	2006	26	Huainan Corrosion Engineering CO.,
Turpan, Xinjiang Oilfield Gathering Project	Polyethylene tape&Primer	2006	22	Xinxiang Construction Group Co., Ltd.
Xinjiang Kashi oilfield	Polyethylene tape&Primer	2006	45	PetroChina Pipeline Company
Lunan Chemical Fertilizer Plant Project	Polyethylene tape&Primer	2006	20	The sixth company of Sinopec
Tengzhou fertilizer pipeline project	Polyethylene tape&Primer	2007	95	The third company of Sinopec
Xinjiang Korla oil piplines	Polyethylene tape&Primer	2006	72	Beijing FoYou Engineering Co., Ltd.
Natural gas project in Jinan	Polyethylene tape&Primer	2006	64	Jinan Gas Co., Ltd.
Yankuang 1.5 million tons of methanol project	Polyethylene tape&Primer	2007	80	Yulin , Bo-Heng Industry & Trade Group Corporation

Jiangsu Bluebird pipe drainage works	Polyethylene tape&Primer	2007	18	Jiangsu Xin Long Pipeline Engineering Company
Tianjin Dagang Oilfield transportation engineering	Polyethylene tape&Primer	2007	14	Dagang Oilfield Construction Company
Liaoning Huajin Group BBS Project	Polyethylene tape&Primer	2007	168	Henan Kyushu Corrosion Company
The second phase project of oil depot in Cheng Hui Rugao	Polyethylene tape&Primer	2007	84	Jiangsu Xin Long Pipeline Engineering Company
Quanzhou liquefied natural gas underground pipeline	Polyethylene tape&Primer	2007	86	Quanzhou Liquefied Gas Co., Ltd.
Karamay oil pipeline in Xinjiang	Polyethylene tape&Primer	2007	103	Urumqi electricity insulation company
Qilu ethylene Project	Polyethylene tape&Primer	2007	35	Peixian corrosion insulation Engineering Corporation
Shengli Oilfield XingTong Construction Engineering Co., Ltd.	Polyethylene tape&Primer	2007	85	Shengli Oilfield Construction Co., Ltd.
Sichuan Phosphorus Chemical Group	Polyethylene tape&Primer	2007	43	Deyang Chemical Co., Ltd.
Jialong Petrochemical Co., Ltd. Underground pipeline corrosion engineering	Polyethylene tape&Primer	2007	40	Quanzhou corrosion Engineering Co., Ltd.
Jinan Steel Group Pipeline Project	Polyethylene tape&Primer	2007	65	Jiangxi Corrosion installation company
Huizhou Daya Bay gas project	Polyethylene tape&Primer	2008	86	The first building Corporation of the China National Petroleum
Tianjin Tanggu Lingang Chemical storage tank project	Polyethylene tape&Primer	2008	54	The Sixth China Chemical Engineering Construction Co., Ltd.
Liaoning Huajin Group Project	Polyethylene tape&Primer	2008	48	The Ninth China Chemical Engineering Construction Co., Ltd.
Oil refining project in Guangxi PMT2 project	Polyethylene tape&Primer	2008	65	Henan Kyushu Corrosion Company
Oil refining project in Guangxi PMT3 project	Polyethylene tape&Primer	2008	43	Henan Kyushu Corrosion Company
Liaoning Huajin Group Gas transport pipelines Project	Polyethylene tape&Primer	2008-3-17	15	The Ninth Construction Company of Sinopec
Liaoning Huajin Chemical Industry Group Co., Ltd. Aromatic hydrogen Item	Polyethylene tape&Primer	2008-4-1	78	The Ninth Construction Company of Sinopec
Jie Cheng Industry & Trade Co., Ltd. In Karamay	Polyethylene tape&Primer	2008	15	Kazakhstan
Binzhou refinery project	Polyethylene tape&Primer	2008	10	Binzhou corrosion engineering company
Tianjin Project Construction Co., Ltd.	Polyethylene tape&Primer	2008	25	Tianjin Project Construction Co., Ltd.
Fujian Fire-Gas CO.,LTD	Polyethylene tape&Primer	2008	18	Jiangxi Corrosion installation company

Jiangsu Electrical and Mechanical Co., Ltd.	Polyethylene tape&Primer	2008	22	Jiangsu Pipeline Company
Zibo Green Gas Co., Ltd.	Polyethylene tape&Primer	2008	35	Jinan Gas Co., Ltd.
Nanjing Petrochemical Co., Ltd	Polyethylene tape&Primer	2008	30	Jiangsu Dashun corrosion company
Yulin Shenmu Daliuta Power Plant Project	Polyethylene tape&Primer	2008	20	Henan corrosion Co.,Ltd
Inner MongoliaSpace wood polysilicon project	Polyethylene tape&Primer	2008	18	Hohhot corrosion installed company
Datang International Chemical Pipeline Project	Polyethylene tape&Primer	2008	25	China National Petroleum Pipelines Corporation
…… ……..	…… ……..	…… ……..	…… ……..	…… ……..

Abroad

Project name	Delivery time	Construction
Iran、Sudan gas transport pipelines project	2006、2—2006、8	Langfang Pipeline Bureau four companies
Indonesia	2006、12	Shengli oil building CO.,
Myanmar pipelines	2007	Beijing Euro Technology CO.,
Argentina Gold pipeline	2007	China Metallurgical Group
Turkey water-supply pipelines project	2007	ÜNSA (Hangzhou) Packaging Manufacturing Co., Ltd
Nigeria pipelines	2007	Huihong International Group
Singapore Drainage pipeline project	2007	Frostex services LLC.
Pakistan Gas Board	2007	Sogema Group.,Ltd
Ecuador drainage pipe project	2007	KATHNATY PETROLEUM SERVICE CIA. LTDA.
Kazakhstan Oil CO.,	2008	Xinjiang Petroleum Administration Bureau of Foreign Trade and Economic Corporation
Algeria Water-supply project	2008	Qingdao Taixing Petrochemical Technology Co., Ltd.
Uzbekistan pipeline project	2008	Xinjiang Petroleum Administration Bureau of Foreign Trade and Economic Corporation
Singapore drainage pipe line project	2008	Shanghai Carrying Trading CO.,Ltd

Country	Project Name	Provide time	Construction Company
U.S.A	Nitrogen Pipe Line Project	April, 2006	Northern Air Products Co., Ltd.
Macedonia	Anticorrosion of Kejia Electric Power Station	Aug.,2006	China Energy Coating Development Co.,Ltd.
Sudan	Oilfield Surface Construction	Nov.,2006	CNPC Service & Engineering Ltd.
Kuwait	Oils of Kuwait Oil Gathering Station	March, 2006	CNPC Service & Engineering Ltd.
Sudan	Refinery Extension	May, 2006	Shenzhen Feng Tian Hao Industry Co., Ltd
Sudan	Oilfield Refinery Project	March, 2006	China Energy Coating Development Co.,Ltd.
Algeria	Condensing of Oil Project	March, 2006	Shengli Oilfield Construction Company
Kazakhstan	China-Kazakhstan Pipe Line	March, 2006	China Petroleum First Pipeline Construction Company
Indonesia	Indonsia Oil Transmission Pipeline	Nov.,2007	Shengli Oilfield Construction Company
Kazakhstan	Sananuoer third Gas Plant	Jun.-Dec.,2007	China Petroleum Engineering Construction Corp.

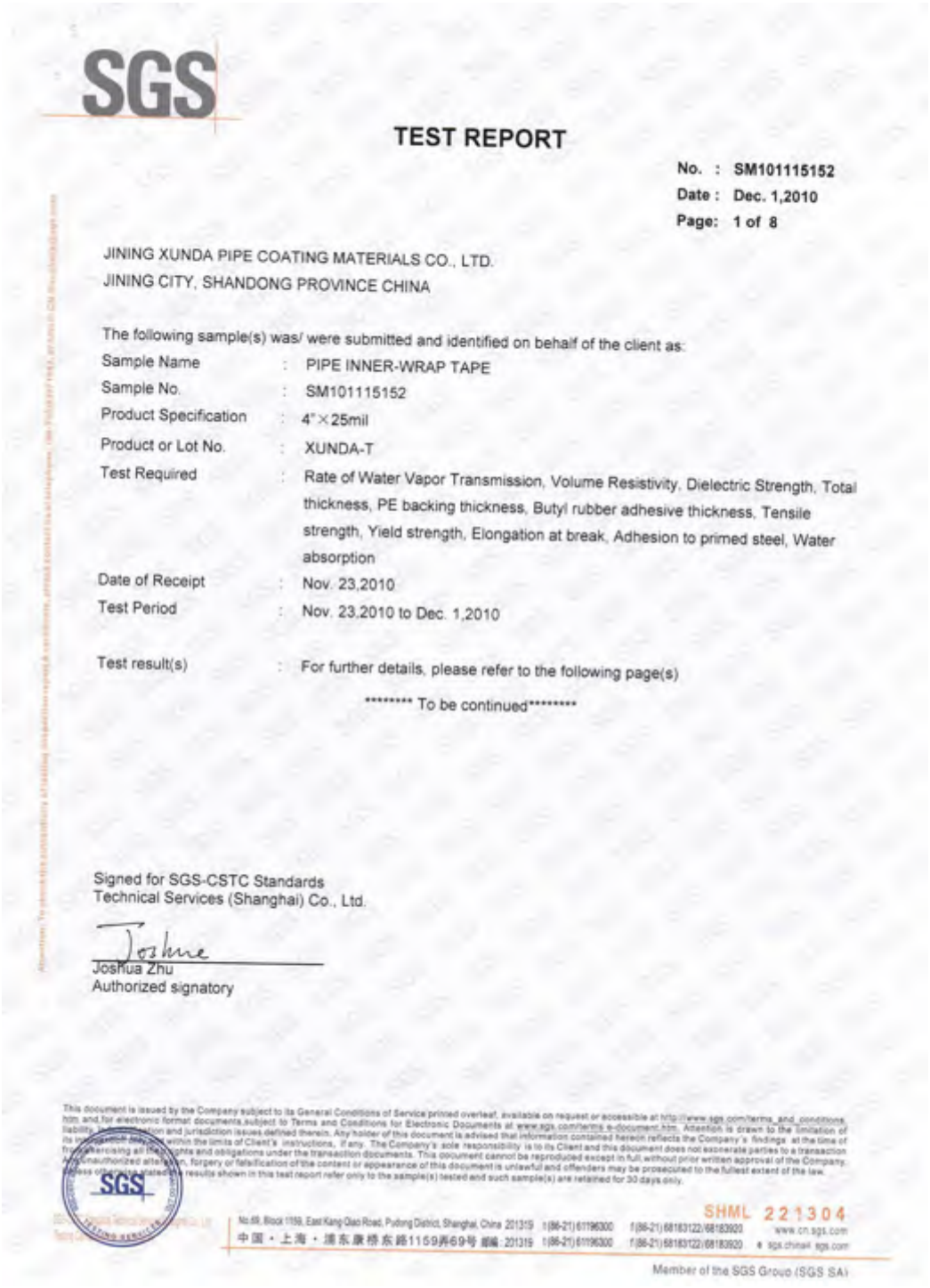
Country	Project Name	Time	Construction Company
Bangladesh	Nalka- bogra gas transmission pipeline project	Dec, 2004	Gas Transmission Company Limited (GTCL)
Bangladesh	Ordinary purchase	Feb,2005	Pashchmanchal Gas Company Limited
Bangladesh	Semutang oilfield pipeline project	Nov.,2005	Bakhrabad Gas Systems Ltd.
Indonesia	Oil Gathering Station	March,2006	PT Kilang Minyak Intan Nusantara
Poland	Ordinary purchase for pipeline net work	May, 2006	the Polish Oil and Gas Mining, PGNIG
Bangladesh	Titas Gas Transmission & Distribution Co.,Ltd	March,2007	Titas Gas Transmission & Distribution Co.,Ltd
Bangladesh	Jalalabad Gas T & D System Ltd	Sep,2007	Jalalabad Gas T & D System Ltd
Bangladesh	Asgar Trading****	Agu,2008	Asgar Trading*****
Iraq	Ministry Of Oil South Oil Company	Nov,2008	A.B.K.Contracting*** LTD.
Bolivia	STI*** LTDA	Feb,2009	STI*** LTDA, BOLIVIA LA PAZ
Kuwait	REZAYAT *** CO.LTD	Mar，2009	REZAYAT *** CO.LTD
Uzbekistan	Turmenia-China gas pipeline	Apr 15,2009	Zeromax GmbH
Kuwait	REZAYAT *** CO.LTD	May 14th 2009	REZAYAT *** CO.LTD
Indonesia	KSM *** Pte Ltd	May 18th 2009	KSM *** Pte Ltd
Vietnam	CONG ***B.A.C.A.U	June 20th 2009	CONG ***B.A.C.A.U
U.K	OLKY ***Co., Ltd	Jul 8th 2009	OLKY ***Co., Ltd
Turkey	YORUM *** LTD.STI.	Agu 10th 2009	YORUM *** LTD.STI.
Kuwait	REZAYAT *** CO.LTD	Agu 16th 2009	REZAYAT *** CO.LTD
Australia	Mobilarm*** Limited	Sep 21st 2009	Mobilarm*** Limited

Australia	CRAFT METALS****	Dec 26th 2009	CRAFT METALS *****
Sri Lanka	CEYLON PETROLEUM CORPORATION	Jan 15,2010	CEYLON PETROLEUM CORPORATION
Bangladesh	Jalalabad Gas Transmission & Distribution System Ltd.	Jan 26,2010	Jalalabad Gas Transmission & Distribution System Ltd.
Pakistan	Material for Fatima NP Fertilizer Plant	Feb 8,2010	Fatima **** Ltd
Kuwait	REZAYAT *** CO.LTD	Apr 27,2010	REZAYAT *** CO.LTD
Indonesia	PT.ASTINA ***INDAH	May 10,2010	ALDINO *****TRADING PTE LTE(Singapore)
Honduras	HONDURAS ***R.L	May 19th,2010	HONDURAS ***R.L
Bolivia	STI LTDA, BOLIVIA LA PAZ	May 19th,2010	STI LTDA, BOLIVIA LA PAZ
Vietnam	DUC DUONG *** CO., LTD	May 25,2010& June 10,2010	DUC DUONG *** CO., LTD
Bangladesh	Jalalabad Gas Transmission & Distribution System Ltd.	May 31,2010	Jalalabad Gas Transmission & Distribution System
Australia	CRAFT METALS ****	June 5,2010	CRAFT METALS****
Bangladesh	Bakhrabad Gas Systems Limited No.:BGSL/FPO/CFE-06	Jue 13,2010	Bakhrabad Gas Systems Limited
Malaysia	Lian Hua****Snd Bhd	July 16,2010	Lian Hua****Snd Bhd
Myanmar	fertilizer plant reconstruction project	July 25,2010	OLKY Technology Equipment Co., Ltd
Indonesia	MEDCO project	Jul-Oct 2010	PT. **** Mandiri
Sri Lanka	Harbour Corporation Project	Agu 14,2010	OLKY ***Co., Ltd
Madagascar	Quincaillerie 2000	Sep 20,2010	Quincaillerie 2000
Australia	CRAFT METALS ****	Oct 12,2010	CRAFT METALS*****
Sri Lanka	CEYLON PETROLEUM CORPORATION	Sep 10,,2010	CEYLON PETROLEUM CORPORATION
Iran	ARD ***CO	Sep,16,2010	ARD ***CO
Bangladesh	M/S Mymun Trading	Oct 5,2010	M/S Mymun Trading
Ecuador	PROMANTI****	Oct 23,2010	PROMANTI****
India	India Oil pipeline	Nov 2,2010	Oil foucus Limited
Indonesia	PT. Astina***Indah	Nov 15,2010	PT. Astina *** Indah
USA	USA Rubber ** Tech	Dec 2,2010	USA Rubber ***Tech
Vietnam	Oil pipeline	Dec 23,2010	Ngyen ****,ltd.

Israel	Israel oil pipeline	Nov 19,2010	Mendeson*** Ltd
Cananda	AIC Group	Feb 23,2011	AIC Group
Bangladesh	Bakhrabad Gas Systems Limited TenderNo.: EPCB(BGSL)/FPO/COAT&WRAP/CFE-02/2009	Mar 13,2011	Bakhrabad Gas Systems Limited
Iran	ARD ***CO LTD	Mar 28,2011	ARD ***CO LTD
Bangladesh	Bakhrabad Gas Systems Limited Tender No. 150 ME(BGSL/FP/COATE &WRAP/CFE-06/2010	April 11,2011	Bakhrabad Gas Systems Limited
Turkey	T&T Systems Co., Ltd	April 26,2011	T&T Systems Co., Ltd
Poland	Termogum Sp. z o.o.	May 15,2011	Termogum Sp. z o.o.
Ecuador	PETROCOMPANY S.A.*****	May 18 ,2011	PETROCOMPANY S.A.*****
Germany	Reck*** Limited	June 16,2011	Reck*** Limited

18、International Certificates

IGS TEST REPORT
Inner tape



SGS

TEST REPORT

No. : SM101115152
Date : Dec. 1,2010
Page: 1 of 8

JINING XUNDA PIPE COATING MATERIALS CO., LTD.
JINING CITY, SHANDONG PROVINCE CHINA

The following sample(s) was/ were submitted and identified on behalf of the client as:

Sample Name	:	PIPE INNER-WRAP TAPE
Sample No.	:	SM101115152
Product Specification	:	4"×25mil
Product or Lot No.	:	XUNDA-T
Test Required	:	Rate of Water Vapor Transmission, Volume Resistivity, Dielectric Strength, Total thickness, PE backing thickness, Butyl rubber adhesive thickness, Tensile strength, Yield strength, Elongation at break, Adhesion to primed steel, Water absorption
Date of Receipt	:	Nov. 23,2010
Test Period	:	Nov. 23,2010 to Dec. 1,2010
Test result(s)	:	For further details, please refer to the following page(s)

******** To be continued********

Signed for SGS-CSTC Standards
Technical Services (Shanghai) Co., Ltd.

Joshua Zhu
Authorized signatory

No.69, Block 1159, East Kang Qiao Road, Pudong District, Shanghai, China 201319 t (86-21) 61196300 f (86-21) 68183122/68183920 www.cn.sgs.com
中国·上海·浦东康桥东路1159弄69号 邮编: 201319 t (86-21) 61196300 f (86-21) 68183122/68183920 e sgs.china@sgs.com

SHML 221304

Outer tape

SGS

TEST REPORT

No. : SM101115153
Date : Dec. 1,2010
Page: 1 of 8

JINING XUNDA PIPE COATING MATERIALS CO., LTD.
JINING CITY, SHANDONG PROVINCE CHINA

The following sample(s) was/ were submitted and identified on behalf of the client as:

Sample Name	:	PIPE OUTER-WRAP TAPE
Sample No.	:	SM101115153
Product Specification	:	4"×25mil
Product or Lot No.	:	XUNDA-T
Test Required	:	Volume Resistivity, Dielectric Strength, Rate of Water Vapor Transmission, Total thickness, PE backing thickness, Butyl rubber adhesive thickness, Tensile strength, Yield strength, Elongation at break, Adhesion to primed steel, Water absorption
Date of Receipt	:	Nov. 23,2010
Test Period	:	Nov. 23,2010 to Dec. 1,2010
Test result(s)	:	For further details, please refer to the following page(s)

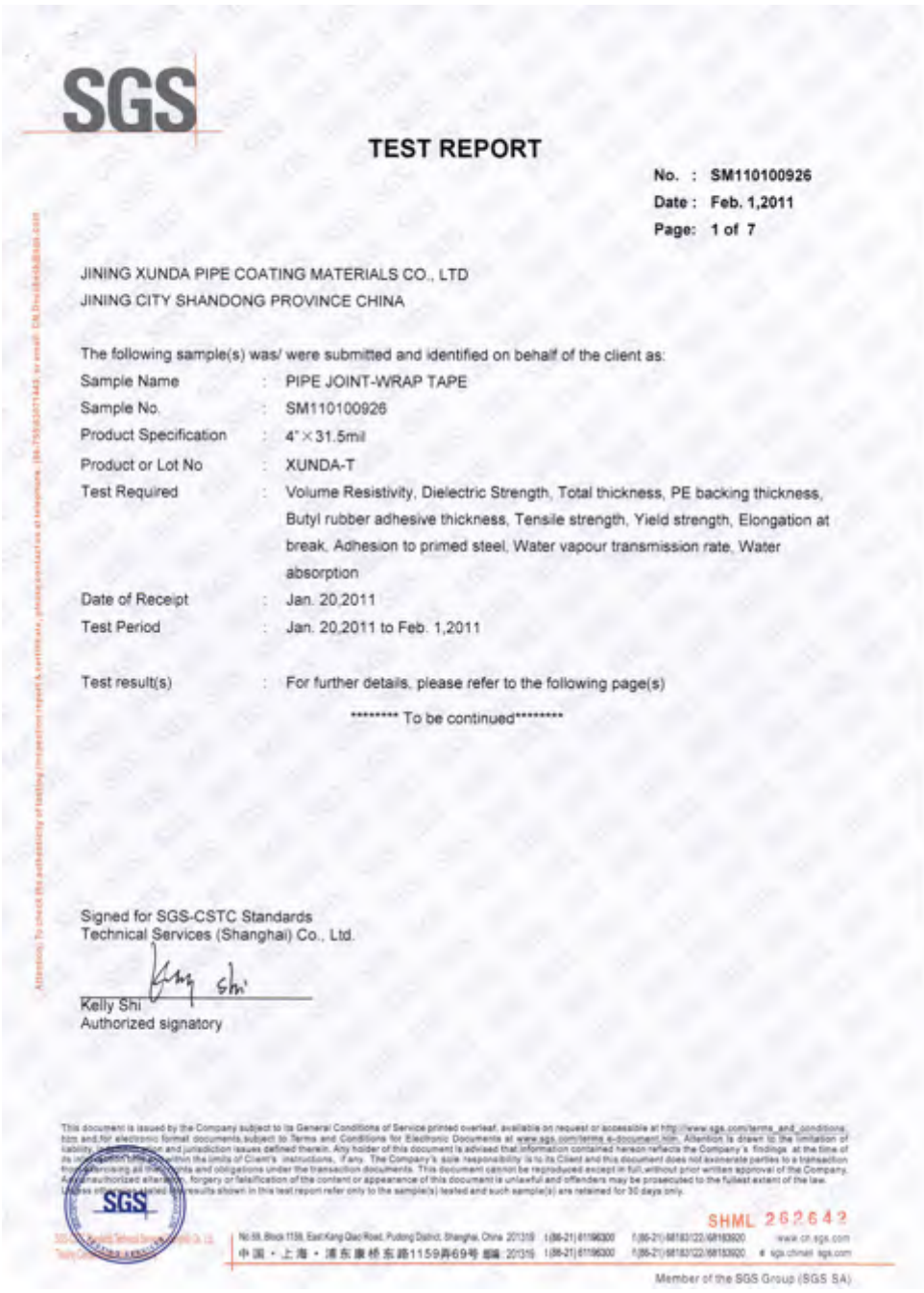
******** To be continued*********

Signed for SGS-CSTC Standards
Technical Services (Shanghai) Co., Ltd.

Joshua Zhu
Authorized signatory

SHML 221312
No.69, Block 1158, East Kang Qiao Road, Pudong District, Shanghai, China 201313 t (86-21) 61196300 f (86-21) 68183122/68183920 www.cn.sgs.com
中国·上海·浦东康桥东路1159弄69号 邮编: 201319 t (86-21) 61196300 f (86-21) 68183122/68183920 e sgs.china@sgs.com
Member of the SGS Group (SGS SA)

Joint tape



SGS

TEST REPORT

No. : SM110100926
Date : Feb. 1,2011
Page: 1 of 7

JINING XUNDA PIPE COATING MATERIALS CO., LTD
JINING CITY SHANDONG PROVINCE CHINA

The following sample(s) was/ were submitted and identified on behalf of the client as:

Sample Name	:	PIPE JOINT-WRAP TAPE
Sample No.	:	SM110100926
Product Specification	:	4"×31.5mil
Product or Lot No	:	XUNDA-T
Test Required	:	Volume Resistivity, Dielectric Strength, Total thickness, PE backing thickness, Butyl rubber adhesive thickness, Tensile strength, Yield strength, Elongation at break, Adhesion to primed steel, Water vapour transmission rate, Water absorption
Date of Receipt	:	Jan. 20,2011
Test Period	:	Jan. 20,2011 to Feb. 1,2011
Test result(s)	:	For further details, please refer to the following page(s)

******** To be continued********

Signed for SGS-CSTC Standards
Technical Services (Shanghai) Co., Ltd.

Kelly Shi
Authorized signatory

SHML 262642

Member of the SGS Group (SGS SA)

DVGW cerificate

DVGW-Forschungsstelle
am Engler-Bunte-Institut
des Karlsruher Instituts
für Technologie KIT

07th July 2011
IIG/bu-jk
Expert: Budde
File-No.: 10/323/5180/1
Application-No.: 10-0565-W

R E P O R T

Type test
of the corrosion protection coating system
"XUNDA-T280/XUNDA-T480"

according to DIN EN 12068 „External organic coatings for the corrosion protection of buried or immersed steel pipelines used in conjunction with cathodic protection - Tapes and shrinkable materials"(March 1999)

Applicant:

Jining Xunda Pipe Coating Materials Co.,Ltd

Ershilipu Industry Park, Rencheng District, Jining, Shangdong, P.R.China

DAkkS Deutsche Akkreditierungsstelle D-PL-12098-01-01

(This report includes 4 pages and 4 attachments)

Eine Einrichtung des DVGW (Deutscher Verein des Gas- und Wasserfaches e.V.) und des Karlsruher Instituts für Technologie KIT

Adresse: Engler-Bunte-Ring 1-7 D- 76131 Karlsruhe
http://www.dvgw-ebi.de

Baden-Württembergische Bank Karlsruhe
BLZ: 600 501 01
Konto: 749 550 00 39
BIC: SOLADEST
IBAN: DE 07 6005 0101 7495 5000 39

USt.-ID-Nr. (VAT): DE 114 341 970
Steuer-Nr.: 206/5887/0745
Finanzamt: Bonn-Außenstadt

I. General

The company Jining Xunda Pipe Coating Materials Co., Ltd, Jining, Shandong, China, entrusted the DVGW-Forschungsstelle -Test Laboratory Gas- at the Engler-Bunte-Institut of the Karlsruher Institute of Technology (KIT) with testing of the corrosion protection coating "XUNDA-T280/XUNDA-T480" in combination with the primer "XUNDA-P29" according to DIN EN 12068, stress-class C-50 column 2.

Samples required for testing have been placed at the disposal of the test laboratory at 15.11.2010.

II. Test basis

Basis for testing is DIN EN 12068 "External organic coatings for the corrosion protection of buried or immersed steel pipelines used in conjunction with cathodic protection - Tapes and shrinkable materials" (March 1999.

III. Description of the coating system

After thorough cleaning the pipe surface and the adjacent factory coating are coated with the primer "XUNDA-P29". After drying the tape "XUNDA-T480" is wrapped around the pipe with 50 % overlap (2 layers)."Xunda-T280" is wrapped on top of the inner wrap also 50 % overlap (resulting in 4 layers in total). The tape "XUNDA-T480", with a total thickness of ≈ 0,86 mm, consists of a PE-carrier film (thickness ≈ 0,30 mm), which is coated with butyl rubber on both sides, while the tape "XUNDA-T280", with a total thickness of ≈ 0,90 mm, consists of a PE-film (thickness ≈ 0,45 mm), coated with the adhesive only on one side. Further information is given in manufacturers literature and recommendations for application. According to manufacturers information the corrosion protection system is compatible with polyethylene (PE) and epoxy (EP) factory coatings.

The standard indication of the coating system is:

Coating EN 12068-C 50, column 2

IV. Testing

Testing till now was carried out by samples provided by the manufacturer, according to the annexes referred to in table 1 and 2 of DIN EN 12068 under the test conditions defined for a coating system EN 12068-C 50, column 2.

V. Attachments

This test report contains the following one-sided annexes:

Attachment 1 and 2: Test results
Attachment 3: Measuring tools and test equipment

VI. Summary

The corrosion protection system "XUNDA-T280/XUNDA-T480", with the primer "XUNDA-P29" of the company Jining Xunda Pipe Coating Materials Co., Ltd, Jining, Shandong, China, fulfils all requirements for coating systems of stress-class C, column 2 according to DIN EN 12068 (March 1999) with operating temperatures up to 50 °C as far as they has been tested according to attachment 1 and 2. The system is compatible with polyethylene (PE) and epoxy (EP) factory coatings.

A duplication of the test report in parts requires the written approval of the test laboratory.

Only the complete test report is allowed to be duplicated and handed over.

DVGW-FORSCHUNGSSTELLE
Test Laboratory Gas

(Head of test laboratory) (Expert)

(Dipl.-Ing. J. Stenger) (B. Budde)

Attachment 1 of 3

Attachment to the test report dated 07.07.2011 on type test of the corrosion protection coating "XUNDA-T280/XUNDA-T480"	DIN EN 12068
File-No.: 10/323/5180/1 **Application-No.: 10-0565-W**	
Stress class: C, column 2	Permanent operating temperature: 50 °C

No.	Property	Unit	Requirement	Test result
1	Impact resistance	J	≥ 15	> 15
2	Indentation resistance at 50 °C - residual thickness	mm	≥ 0,6	1,26
3	Specific electrical insulation Resistance R_{s100}	Ω m²	≥ 10^8	1 x 10^{10}
4	Cathodic disbondment resistance			
	- at 23 °C	mm	≤ 15	7
	- at 50 °C	mm	-	27
5	Peel strength layer to layer			
	-at 23 °C			
	--inner layer/inner layer	N/mm	≥ 1,5	2,7
	--outer layer/inner layer	N/mm	≥ 1,5	2,6
	--outer layer/outer layer	N/mm	≥ 0,2	2,2
	-at 50 °C			
	--inner layer/inner layer	N/mm	≥ 0,2	0,3
	--outer layer/inner layer	N/mm	≥ 0,2	0,4
	--outer layer/outer layer	N/mm	≥ 0,2	0,3
6	Peel strength			
	To pipe surface			
	- at 23 °C	N/mm	≥ 0,75	0,9
	- at 50 °C	N/mm	≥ 0,075	0,09
	To factory coating			
	--PE at 23 °C	N/mm	≥ 0,4	0,8
	--PE at 50 °C	N/mm	≥ 0,04	0,1
	--EP at 23 °C	N/mm	≥ 0,4	0,7
	--EP at 50 °C	N/mm	≥ 0,04	0,2
7	Lap shear strength at 50 °C			
	-- to pipe surface	N/mm²	≥ 0,05	0,05
	-- to PE-factory coating	N/mm²	≥ 0,05	0,05
	-- to EP-factory coating	N/mm²	≥ 0,05	0,05

Applicant: Jining Xunda Pipe Coating Materials Co., Ltd

272100 Jining, China

DVGW-Forschungsstelle Prüflaboratorium Gas
Engler-Bunte-Ring 1-7, D - 76131 Karlsruhe

Attachment 2 of 3

Attachment to the test report dated 07.07.2011 on type test of the corrosion protection coating "XUNDA-T280/XUNDA T-480" **File-No.: 10/323/5180/1** **Application-No.: 10-0565-W**	DIN EN 12068
Stress class: C, column 2	Permanent operating temperature: 50 °C

No.	Property	Unit	Requirement	Test result	
8	Microbiological resistance	-	on agreement	-	
9	Resistance to thermal ageing (100d/70 °C)			T280	T480
	- ratio of				
	- tape strength	-	$1,25 \geq S_{100}/S_0 \geq 0,75$	1,0	1,0
			$S_{100}/S_{70} \geq 0,8$	1,0	1,0
	- elongation at break	-	$1,25 \geq E_{100}/E_0 \geq 0,75$	1,0	1,0
			$E_{100}/E_{70} \geq 0,8$	1,0	1,0
	- Peel strength layer to layer	-			
	inner/inner		$P_{100}/P_T \geq 0,75$	-	
			$P_{100}/P_{70} \geq 0,8$	-	
	outer/inner;		$P_{100}/P_T \geq 0,75$	-	
		-	$P_{100}/P_{70} \geq 0,8$	-	
	outer/outer		$P_{100}/P_T \geq 0,75$	-	
			$P_{100}/P_{70} \geq 0,8$	-	
	- Peel strength to pipe surface	-	$A_{100}/A_T \geq 0,75$	-	
			$A_{100}/A_{70} \geq 0,8$	-	
10	Low temperature		no separation, tears or cracks	passed	

Applicant: Jining Xunda Pipe Coating Materials Co., Ltd

272100 Jining, China

DVGW-Forschungsstelle Prüflaboratorium Gas
Engler-Bunte-Ring 1-7, D - 76131 Karlsruhe

Attachment 3 of 3

Attachment to test report dated 07.07.2011 on the type test of the corrosion protection coating "XUNDA-T280/XUNDA-T480" **File-No.: 10/323/5180/1** **Application-No.: 10-0565-W**	DIN EN 12068

Corrosion protection coating EN 12068: C 50, column 2

File 5180

Test standard **DIN EN 12068** „External organic coatings for the corrosion protection of buried or immersed steel pipelines used in conjunction with cathodic protection - Tapes and shrinkable materials"(March 1999)

Used measuring tools:

IIG/2801	Analytical balance
IIG/2205	Tensile-test machine
IIG/2704	Thickness gauge
IIG/2402	Teraohmmeter
IIG/3409	Voltmeter
IIG/3410	Temperature gauge

Used testing equipment:

IIG/2905	Indentation equipment
IIG/6201/6202/6207/6208/6234	Heat treating furnace
IIG/3412	Power pack
IIG/6501	Impact equipment
IIG/6709	Sandblast machine
IIG/3403	High voltage plant
IIG/3407/3408	Potentiometer arrangement

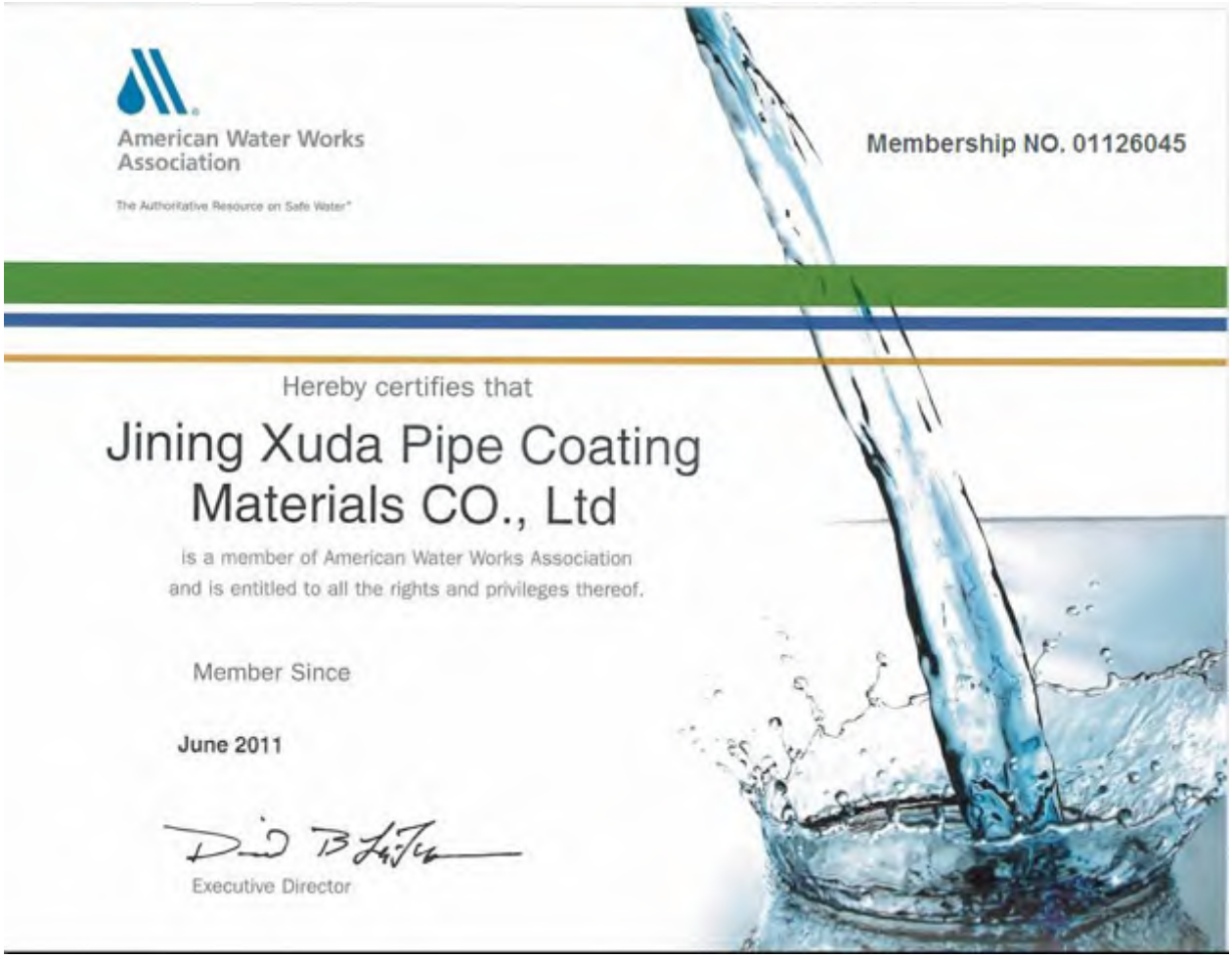
Date: 07.07.2011 Tester: Ringwald

Applicant: **Jining Xunda Pipe Coating Materials Co., Ltd**

272100 Jining, China

DVGW-Forschungsstelle Prüflaboratorium Gas Engler-Bunte-Ring 1-7, D - 76131 Karlsruhe

AWWA


American Water Works Association
The Authoritative Resource on Safe Water™
Membership NO. 01126045
Hereby certifies that
Jining Xuda Pipe Coating Materials CO., Ltd
is a member of American Water Works Association
and is entitled to all the rights and privileges thereof.
Member Since
June 2011
Executive Director

19、ISO 9001

ISO9001

Guangdong Zhongjian Certification Co., Ltd.

CERTIFICATE OF CONFORMITY OF QUALITY MANAGEMENT SYSTEM CERTIFICATION

No: 00710Q12175R0M

This is to certify that the quality system of

JI'NING XUNDA PIPE COATING MATERIALS CO., LTD.

ERSHILIPU INDUSTRIAL PARK, RENCHENG DISTRICT, JI'NING PROVINCE, SHANDONG PROVINCE

REGISTER ADDRESS: HUYING VILLAGE, ERSHILIPU TOWN, RENCHENG DISTRICT, JI'NING PROVINCE, SHANDONG PROVINCE

P.C. : 272153

is in conformity with

GB/T19001–2008 idt ISO9001:2008 Standard

This system is valid for the

DESIGN, PRODUCTION AND SALE OF VARIOUS STRUCTURE POLYLEFIN RUBBER TAPES FOR METAL PIPELINE ANTI-CORROSION PROTECTION; PRODUCTION AND SALE OF SUPPORTING UNDERFILL

(If the above scope involves pre-approval of administration permission and compulsory certification, this certificate only covers products/ services in the approved / certified scope.)

Date of issue: 2010-11-2

Term of validity of this certificate:from 2010-11-2 to 2013-11-1 inclusive

Approval of the first surveillance audit
Zhongjian Certification Co.,Ltd.

Approval of the second surveillance audit
Zhongjian Certification Co.,Ltd.

Approval of the third surveillance audit
Zhongjian Certification Co.,Ltd.

Representative of The Company

CNAS

MANAGEMENT SYSTEM
CNAS C007- Q

MEMBER OF MULTILATERAL RECOGNITION ARRANGEMENT
IAF

Further to the certificate applicability, please enquire to the organization,contact 020-87369002 or visit www.gzcc.org.cn for enquiry
4/F, Huajing building, middle of guangzhou avenue, Guangzhou city, guangdong province(510600) Guangdong Zhongjian Certification Co., Ltd.

20、ISO 14001

ISO14001

Guangdong Zhongjian Certification Co., Ltd.

ENVIRONMENTAL MANAGEMENT SYSTEM CERTIFICATE

No: 00710E20680R0M1

This is to certify that the Environmental Management system of

JI'NING XUNDA PIPE COATING MATERIALS CO., LTD.

ERSHILIPU INDUSTRIAL PARK, RENCHENG DISTRICT, JI'NING PROVINCE, SHANDONG PROVINCE
REGISTER ADDRESS: HUYING VILLAGE, ERSHILIPU TOWN, RENCHENG DISTRICT, JI'NING PROVINCE, SHANDONG PROVINCE

P.C. : 272153

By reason of its

Environmental Management System

Has been awarded this certificate for compliance with the standard

GB/T24001-2004 idt ISO14001:2004

The Environmental Management System applies in the following area:

THE ACTIVITIES AND LOCATIONS INVOLVED WITH DESIGN, PRODUCTION AND SALE OF VARIOUS STRUCTURE POLYLEFIN RUBBER TAPES FOR METAL PIPELINE ANTI-CORROSION PROTECTION; PRODUCTION AND SALE OF SUPPORTING UNDERFILL LOCATED AT ERSHILIPU INDUSTRIAL PARK, RENCHENG DISTRICT, JI'NING PROVINCE, SHANDONG PROVINCE (REGISTER ADDRESS: HUYING VILLAGE, ERSHILIPU TOWN, RENCHENG DISTRICT, JI'NING PROVINCE, SHANDONG PROVINCE), JI'NING XUNDA PIPE COATING MATERIALS CO., LTD.

(If the above scope involves pre-approval of administration permission and compulsory certification, this certificate only covers products/services in the approved / certified scope.)

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Zhongjian Certification Co.,Ltd.

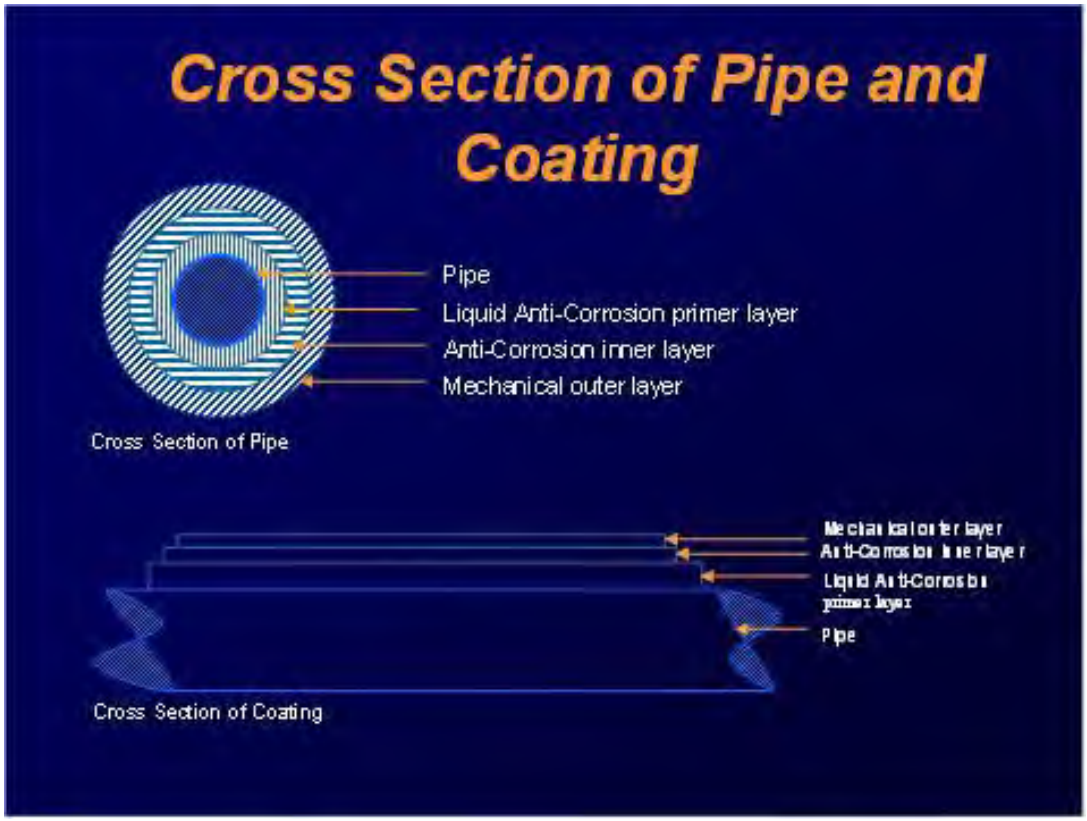
Representative of The Company

CNAS

MANAGEMENT SYSTEM
CNAS C007- E

MEMBER OF MULTILATERAL RECOGNITION ARRANGEMENT
IAF

Further to the certificate applicability, please enquire to the organization,contact 020-87536902 or visit www.gzcc.org.cn for enquiry



Customer needs

Our pursuit

JINING XUNDA PIPE COATING MATERIALS CO.,LTD

ADD:Ershilipu Industry Park,Jining City ,Shandong Province , China

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Website : www.pipe-anticorrosion-tape.com

www.anti-corrosion-tape.com