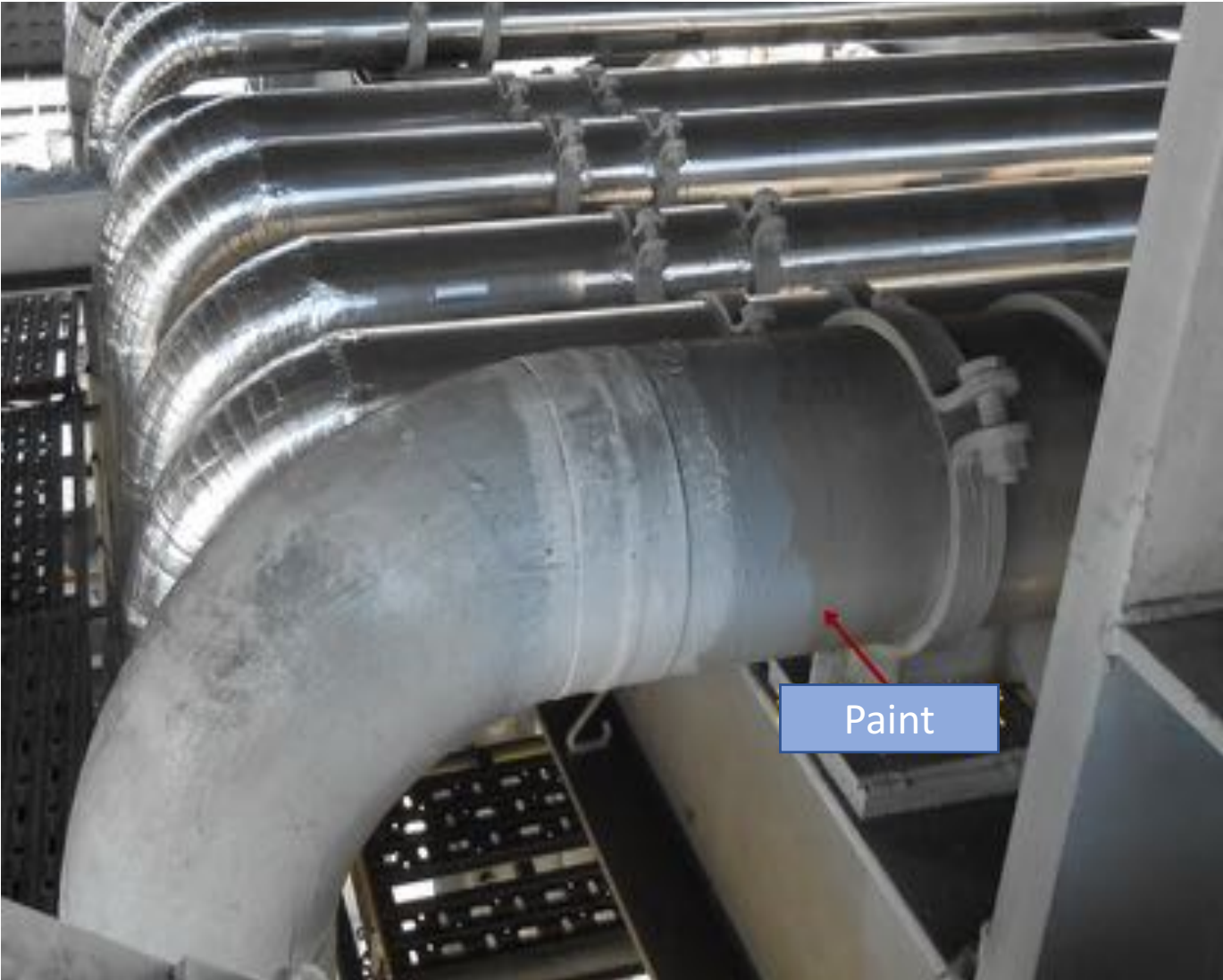




# Pipe corrosion



Every Pipeline in industrial plants needs to be re-painted within 1 - 3 years



# Tape 2S/1233X



1232 X

## Lenzingtex Tape 1233X / 2S

Lenzing  
Plastics  
Lenzing Plastics GmbH & Co KG  
A 4860 Lenzing, Austria  
[www.lenzing-plastics.com](http://www.lenzing-plastics.com)

### Construction

|  |                                      |
|--|--------------------------------------|
|  | Weather protection film, transparent |
|  | Alufoil, glossy                      |
|  | Pressure sensitive acrylic adhesive  |
|  | Siliconized paper or film            |

### Technical Details

|  |   |                             |
|--|---|-----------------------------|
| Thickness incl. liner:   | approx. 0,13 mm                             |                             |
| Elongation:  | > 50 %                                      | ISO 527-3                   |
| Tensile strength:  | > 65 N/15mm                                 | ISO 527-3                   |
| Adhesion to steel:   | > 5 N/10mm                                  | DIN EN 1939<br>issued 11/96 |
| Puncture resistance Ø 0,8mm:   | > 9 N                                       | prEN 14477                  |
| Puncture resistance Ø 3,0mm:   | > 35 N                                      | prEN 14477                  |
| Working temperature:   | -40 to +120 °C                              |                             |
| Water vapor permeability:  | <0,01 g/m²/24h                              | ISO 15106-2                 |
| Emissivity:  | ~0,65                                       | ASTM C 1371                 |
| Weather resistance testing:  |   | ASTM G 26A<br>ISO 4892-2    |
| Fire rating without adhesive and liner   | 25/50                                       | ASTM E84-12                 |
| Storage:   | at about 20°C to 30°C and max. 65% humidity |                             |
| This product is an advanced research product.<br>Technical characteristics are subject to alterations. |   |                             |

### Characteristics

- superior cold weather adhesion • aggressive tack
- excellent high and low temperature performance • water resistant • UV resistant • chemicals resistant • saltwater resistant • very flexible • water vapour barrier • solvent-free

### Roll Make Up

Width: available up to 1,000 mm

Mat.-Nr.: 77900014, 77900015...  
Doc-Nr.: PS003416 / 2  
Edition: Jän.16





# Tape 2W/1236X



## Lenzingtex Tape 1336X / 2W

Lenzing  
Plastics  
Lenzing Plastics GmbH & Co KG  
A 4860 Lenzing, Austria  
[www.lenzing-plastics.com](http://www.lenzing-plastics.com)

### Construction

|  |   |
|--|---|
|  | Weather protection film, white<br>Alufoil, glossy<br>Pressure sensitive acrylic adhesive<br>Siliconized paper or film |
|--|---|

### Technical Details

|   |                 |                             |
|---|-----------------|-----------------------------|
| Thickness incl. liner:                    | approx. 0,13 mm |                             |
| Elongation:                               | > 50 %          | ISO 527-3                   |
| Tensile strength:                         | > 65 N/15mm     | ISO 527-3                   |
| Adhesion to steel:                        | > 5 N/10mm      | DIN EN 1939<br>issued 11/96 |
| Puncture resistance Ø 0,8mm:              | > 9 N           | prEN 14477                  |
| Puncture resistance Ø 3,0mm:              | > 35 N          | prEN 14477                  |
| Working temperature:                      | -40 to +120 °C  |                             |
| Water vapor permability:                  | <0,01 g/m²/24h  | ISO 15106-2                 |
| Emissivity:                               | ~0,65           | ASTM C 1371                 |
| Weather resistance testing:               |                 | ASTM G 26A<br>ISO 4892-2    |
| Fire rating without<br>adhesive and liner | 25/50           | ASTM E84-12                 |

Storage: at about 20°C to 30°C and max. 65% humidity

This product is an advanced research product.  
Technical characteristics are subject to alterations.

### Characteristics

- superior cold weather adhesion • aggressive tack
- excellent high and low temperature performance • water resistant • UV resistant • chemicals resistant • saltwater resistant • very flexible • water vapour barrier • solvent-free

### Roll Make Up

Width: available up to 1,000 mm

Mat.-Nr.: 77901376, 77901377. ...  
Doc.-Nr.: PS003415 / 2  
Ausgabe: Jän.16



# Saltwater and Chemicals Resistance:

|                                   |                               |                     |                                 |                       |                        |           |
|-----------------------------------|-------------------------------|---------------------|---------------------------------|-----------------------|------------------------|-----------|
| <b>Acids</b>                      | Acetic acid                   | resistant           | <b>Chlorinated hydrocarbons</b> | Carbon tetrachloride  | partially resistant    |           |
|                                   | 50% formic acid               | resistant           |                                 | Chlorinated biphenyls | partially resistant    |           |
|                                   | 10% hydrochloric acid         | resistant           |                                 | Chloroform            | resistant              |           |
|                                   | 30% hydrochloric acid         | partially resistant |                                 | Trichloroethylene     | resistant              |           |
|                                   | 10% and 35% hydrofluoric acid | resistant           |                                 | <b>Esters</b>         | Ethyl acetate          | resistant |
|                                   | 10% nitric acid               | resistant           |                                 | <b>Hydrocarbons</b>   | Aliphatic hydrocarbons | resistant |
|                                   | 65% and 100% nitric acid      | not resistant       |                                 |                       | Benzene                | resistant |
|                                   | 30% and 85% phosphoric acid   | resistant           |                                 |                       | Gasoline (petrol)      | resistant |
|                                   | 20% sulphuric acid            | partially resistant |                                 |                       | Mineral oils           | resistant |
|                                   | Sulphur dioxide gas, dry acid | resistant           |                                 |                       | Toluene                | resistant |
|                                   | not resistant                 | Xylene              | resistant                       |                       |                        |           |
| <b>Aldehydes</b>                  | Acetaldehyde                  | resistant           | <b>Miscellaneous substances</b> | Chlorine              | resistant              |           |
|                                   | Formaldehyde                  | resistant           |                                 | Hydrogen peroxide     | resistant              |           |
| <b>Alcohols</b>                   | Benzyl alcohol                | partially resistant |                                 | Oxygen                | resistant              |           |
|                                   | Cyclohexanol                  | resistant           |                                 | Water*                | resistant              |           |
|                                   | Ethyl alcohol                 | resistant           | <b>Other organic solutions</b>  | Acetone               | resistant              |           |
|                                   | Glycerine                     | resistant           |                                 | Diethylether          | resistant              |           |
|                                   | Glycol                        | resistant           |                                 | Nitrobenzene          | not resistant          |           |
|                                   | Isopropyl alcohol             | resistant           |                                 | Phenol                | not resistant          |           |
|                                   | Methyl alcohol                | resistant           | <b>Salt solutions</b>           | Alkaline carbonates   | resistant              |           |
| <b>Aqueous alkaline solutions</b> | Ammonium hydroxide            | not resistant       |                                 | Bichromates           | resistant              |           |
|                                   | Calcium hydroxide             | partially resistant |                                 | Cyanides              | resistant              |           |
|                                   | Sodium hydroxide              | not resistant       |                                 | Fluorides             | resistant              |           |

The pipeline close to the cooling tower of the refinery at Qi Dao street has been corroded within short time.

The reason of corrosion are most probably chemical fume and toxic smoke. As additional corrosion protection, we recommend to apply Lenzing Jacketing self-adhesive tapes directly on the pipeline.

These tapes protect the pipeline from UV-light, water, water vapor and corrosive fumes.

Based on our reviews, we expect that the concerned tapes will protect the pipeline from corrosion for approx. 10 years.

We recommend to test Lenzing Jacketing tapes in silver and white on all concerned pipeline especially in the harbor area.

## Test Installation to Metal Pipes


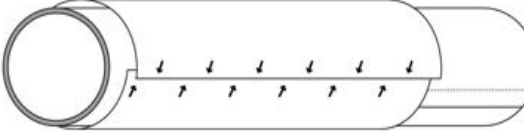

The large pipelines on the left side have been painted and the small pipelines on the right side have been taped. After 2 years approx. 50% of the paint has gone. The taped pipes have been fine without any visible damage or corrosion (department D2B/February 2013)





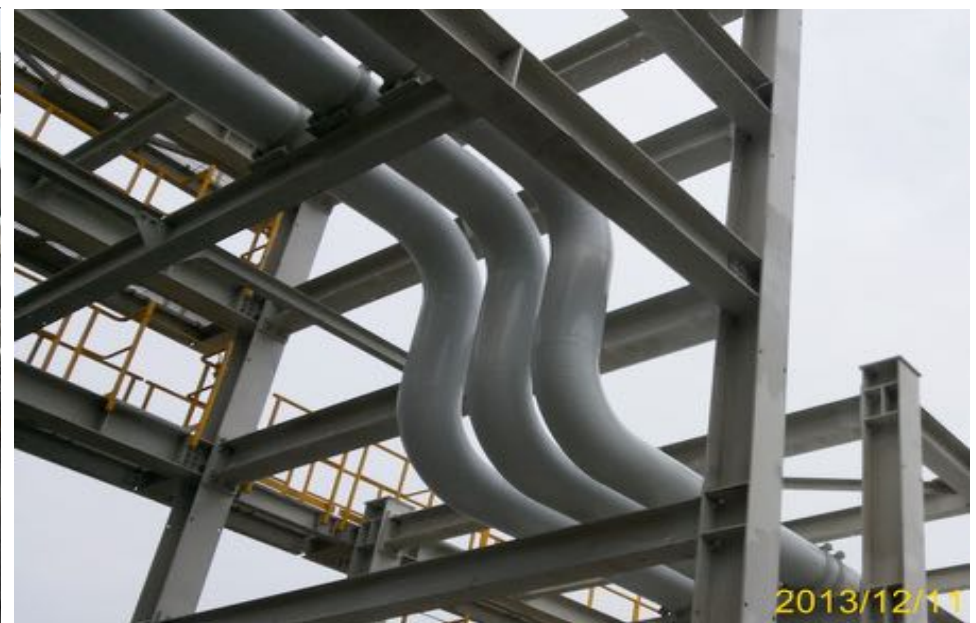


# Installation Manual on Straight Pipes

|  |  |
|--|--|
| <p>Before tape application make sure that the pipe is clean, dry and free of grease.</p>   |   |
| <p>Apply the 330mm or 500mm wide tape and overlap all joints min. 30mm. Make sure that rain water can drain easily and avoid standing water.</p> |   |
| <p>Take the Jacketing spattle and press the applied tape firmly on the pipe. This has to be done carefully and on the full face.</p>             |  |



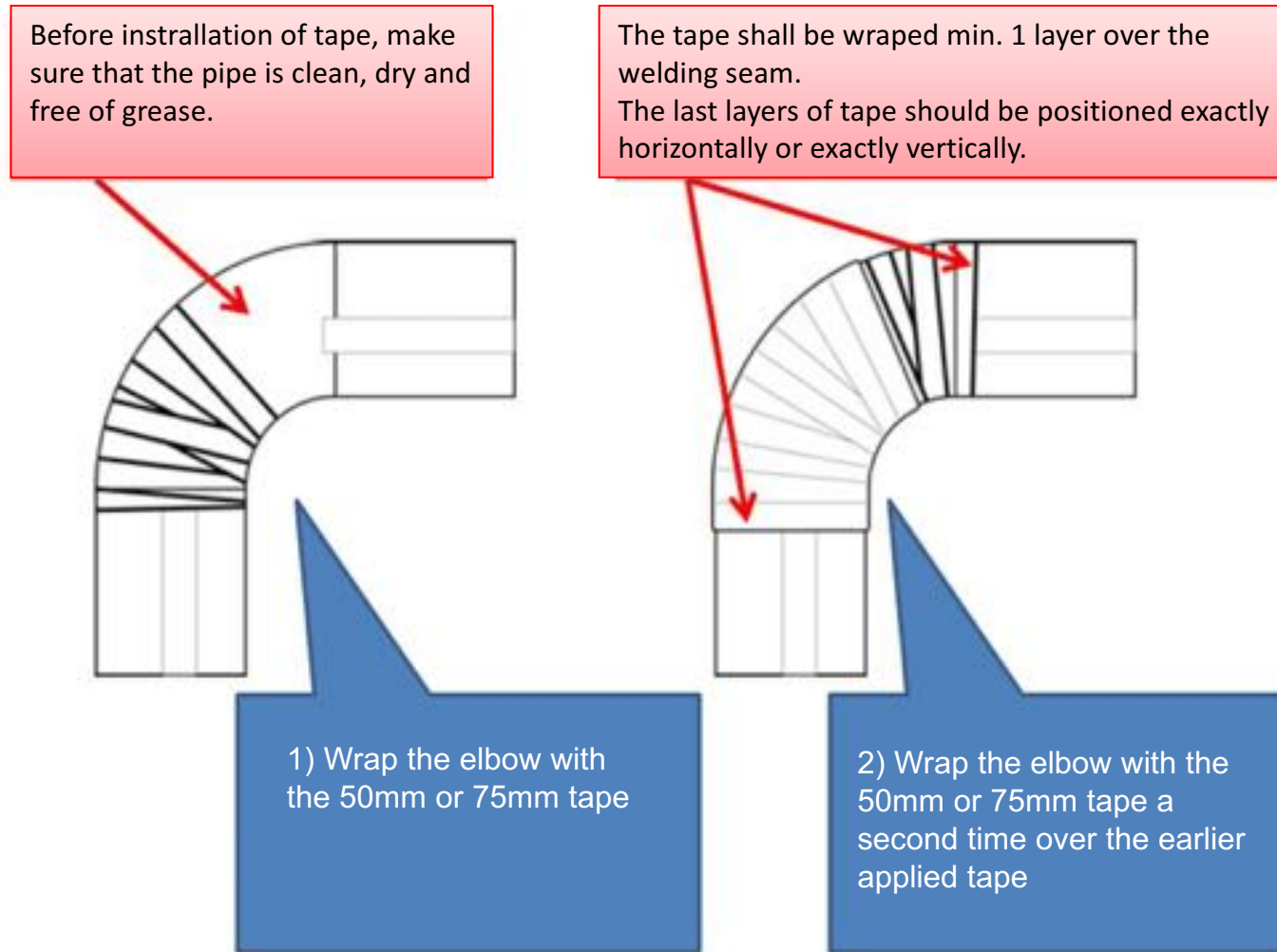
# Pipeline Project/Petrochemical Plant/Mai Liao, Taiwan



2017/12/4

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# Installation Manual on Elbows



Finally it is **MOST IMPORTANT** to take the Jacketing spattle and press the applied tape firmly on the pipe. This has to be done carefully and on the full face.

The suggested double-wrapping of elbows and fittings causes double safety. This ensures long-term corrosion protection of the pipe.

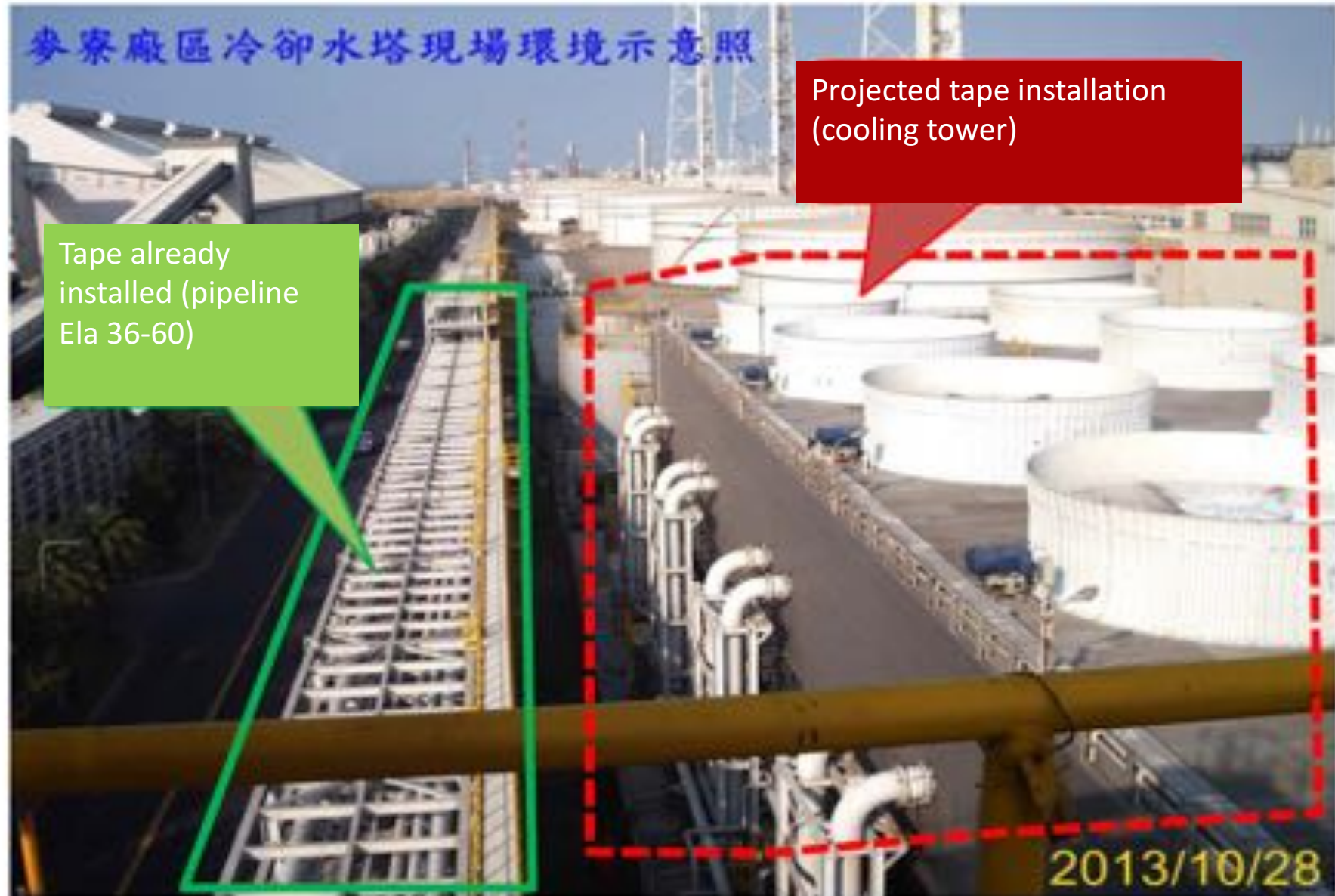


# Cooling Tower Project/Petrochemical Plant/Mai Liao, Taiwan



2017/12/4





# Corrosion Protection at Exxon Mobile Refinery in Singapore



2017/12/4

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