



**COLD WRAP & PIPE
PROTECTION**

TECHNICAL DATA SHEET CHAPTER

2-PLY TAPE COATING SYSTEM

AWWA C209 / C214 • COLD APPLIED

INNER CORROSION PROTECTION +
OUTER MECHANICAL PROTECTION



Cold Applied



Corrosion
Protection



Mechanical
Protection



Strong
Adhesion



UV Resistant



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TECHNICAL DATA SHEET

2-PLY TAPE COATING SYSTEM

AWWA C209 / C214 · COLD APPLIED



YTM MAKINA 2-Ply Tape Coating System AWWA C214 is a cold-applied coating system composed of three elements: a liquid adhesive primer, a corrosion protection (inner) tape and a mechanical protection (outer) tape, both with PE backing and butyl rubber adhesive. Designed for application on site or in the mill, for new line construction or reconditioning of existing metallic pipes, it reduces corrosion and natural deterioration of steel in buried and submarine pipes. The polymeric composition and cold application give a better quality level than bituminous systems.



Inner Tape

Outer Tape

 STANDARD AWWA C209 / C214	 SYSTEM THICKNESS 2,6 MM · 50 % OVERLAP	 MAX. SERVICE TEMPERATURE -40 °C TO +80 °C	 APPLICATION TEMPERATURE -5 °C TO +60 °C
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KEY FEATURES

- ✓ Co-extruded backing - excellent adhesive bond
- ✓ Good adherence to primed steel
- ✓ High mechanical resistance of outer tape
- ✓ Resistant to cathodic disbondment
- ✓ UV resistant · cold applied

SYSTEM COMPOSITION

1 - YTM PRIMER 2 - INNER TAPE 3 - OUTER TAPE

COMPATIBLE WITH COATINGS

PE PP PU FBE GTE

TAPE TECHNICAL DATA

Property	Unit	Inner Tape — 0,50 mm · Black	Outer Tape — 0,80 mm · White	Test Method
THICKNESS				
Adhesive	mm	0,20	0,17	ASTM D1000
Backing	mm	0,30	0,63	ASTM D1000
Total	mm	0,50	0,80	ASTM D1000
MECHANICAL & ELECTRICAL				
Elongation at break	%	≥ 400	≥ 400	ASTM D1000
Tensile strength	N/mm	4,5	8,7	ASTM D1000
Yield strength	N/mm	3,5	3,6	ASTM D1000
Peel adhesion to primed pipe	N/mm	2,4	—	ASTM D1000
Adhesion to inner layer	N/mm	—	1,3	ASTM D1000
Dielectric strength	kV/mm	35	32,9	ASTM D149
Insulation resistance	Ω·m	2,5 × 10 ¹²	2,5 × 10 ¹²	ASTM D1000
ENVIRONMENTAL				
Water vapour transmission	g/(h·m ²)	≤ 0,1	≤ 0,08	ASTM E96
Water absorption	%	< 0,06	< 0,07	ASTM D570
Application temperature	°C	-5 to +60	-5 to +60	—
Max. service temperature	°C	-40 to +80	—	—

SYSTEM PROPERTIES

System Property (Inner + Outer, 50% Overlap)	Unit	Value	Test Method
Impact resistance	N/mm	2,9	ASTM G14
Penetration / deformation resistance (no holiday at 22 °C)	%	21	ASTM G17
Cathodic disbondment	mm	6,8	ASTM G8
Total system thickness	mm	2,6	—

i The system meets the requirements of AWWA C209-06 and AWWA C214-14.



2-PLY TAPE COATING SYSTEM AWWA C214 · APPLICATION GUIDE

FIELDS OF APPLICATION



BURIED PIPELINES



SUBMARINE PIPELINES



FIELD JOINTS & GIRTH WELDS



NEW LINE CONSTRUCTION



RECONDITIONING OF EXISTING PIPES



SITE OR MILL APPLICATION

SURFACE PREPARATION

Surfaces must be dry and free from dirt. Solvent-wipe with a clean cloth to remove any grease deposits. Power wire-brush to remove all scale, loose rust and old flaking coatings to achieve a finish of St 2 according to ISO 8501-1. The preferred method for refurbishment of old pipe lengths is abrasive blast cleaning to Sa 2½ according to ISO 8501-1.

SYSTEM BUILD-UP



- 1 Steel pipe
- 2 YTM Primer
- 3 Inner tape 0,50 mm
- 4 Outer tape 0,80 mm

EQUIPMENT LIST

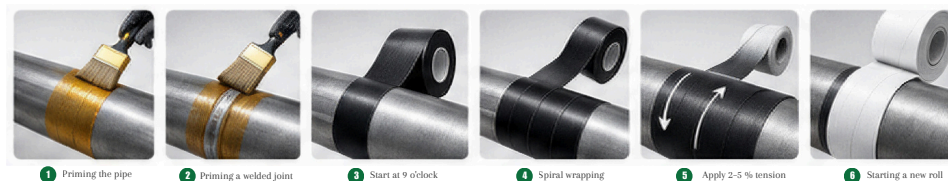
- ✓ Power wire brush, scraper or blast-cleaning equipment (optional)
- ✓ Brush or roller and cleaning solvent
- ✓ Utility knife, overalls, gloves and eye protection
- ✓ Cleaning cloth, hand cleaner and barrier cream

HEALTH, SAFETY & STORAGE

- ! Wear gloves and eye protection; use barrier cream and hand cleaner.
- ! Primer and cleaning solvents are flammable - keep away from open flames and ensure ventilation.
- ! Read the Safety Data Sheets before use; dispose of waste per local regulations.
- ! Store tape cartons dry and covered, away from direct sunlight and heat.

i Primer details: see YTM Primer data sheet. For ease of application use the YTM Manual Tape Wrapping Machine.

APPLICATION PROCEDURE



1 PRIME

- Apply a thin coat of YTM Primer over the entire area to be wrapped - see the YTM Primer data sheet for coverage and drying times.
- Coat a section wide enough that the primer protrudes slightly beyond the tape edges.
- Apply the inner tape while the primer is still tacky.

2 INNER WRAP

- Select as wide a 0,50mm inner tape as practical (e.g. 100 mm wide for a 100 mm pipe).
- Start at the 9 o'clock position; peel back about 0,5 m of interleaving and apply firmly.
- Wrap spirally with tension reducing the tape width by 2-5 % so it conforms without gaps.
- Overlap each turn by 55 % (double layer); start new rolls by overlapping one tape width.
- Tape must only contact primed substrate.

3 OUTER WRAP

- Use the same width of outer tape as the inner tape.
- Start and finish 25 mm beyond the inner tape edges, on primed pipe.
- Place the compound side down onto the inner tape, with 2-5 % tension.
- Overlap each turn by 25 mm (3-layer finish) or 55 % (4-layer finish); start new rolls by overlapping one tape width.

SUPPLY

Product	Width (mm)	Length (m)	Rolls / Carton
Inner tape 0,50 mm	50 / 100 / 150	30	24 / 12 / 8
Outer tape 0,80 mm	50 / 100 / 150	30	12 / 6 / 4

CONSUMPTION GUIDE (THEORETICAL - 55 % OVERLAP - 30 M ROLLS)

Size	OD (mm)	100 mm Tape — m Tape / m Pipe	100 mm Tape — m Pipe / Roll	150 mm Tape — m Tape / m Pipe	150 mm Tape — m Pipe / Roll
DN 100	114,3	8,0	3,7	5,4	5,5
DN 200	219,1	15,3	2,0	10,2	2,9
DN 300	323,9	22,6	1,3	15,1	2,0
DN 600	610,0	42,6	0,7	28,4	1,1

YTM MAKINA guarantees that the products conform to the physical characteristics stated in this data sheet, tested according to the referenced standards. Values are typical; consumption figures are theoretical. The user is responsible for determining the suitability of the products for the intended use. Information is subject to change without notice.

