



COLD WRAP &
PIPE PROTECTION

TECHNICAL DATA SHEET CHAPTER

3-PLY TAPE COATING SYSTEM

EN 12068 CLASS C50 • COLD APPLIED
0.80 MM INNER TAPE + 0.80 MM OUTER TAPE



Cold Applied



Corrosion
Protection



Mechanical
Protection



Strong
Adhesion



UV Resistant



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TECHNICAL DATA SHEET

3-PLY TAPE COATING SYSTEM

EN 12068 CLASS C50 · COLD APPLIED



**EN 12068 Class
C50**

YTM MAKINA 3-PlyTape Coating System EN12068 C50 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.



 STANDARD EN 12068 CLASS C50	 IMPACT RESISTANCE 18 J AT 23 °C	 INNER TAPE 3-PLY · 0,80 MM	 ROLL SIZES 50 / 100 / 150 MM × 30 M
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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 — 3-ply · Black	Outer tape — 2-ply · White	Test method
LAYER BUILD-UP (INNER / BACKING / OUTER)				
Colour	—	black / black / black	black / white / —	—
Thickness	mm	0,34 / 0,30 / 0,16	0,17 / 0,63 / —	—
PROPERTIES				
Elongation at break	%	650	≥ 400	ASTM D1000
Tensile strength	N/cm	120	50,8	ASTM D1000
Dielectric strength	kV/mm	35	45,2	ASTM D149
Water vapour transmission	g/(m ² ·24 h)	0,1	≤ 0,08	ASTM E96
Fragility temperature	°C	-46 ± 4	-46 ± 5	DIN 53372
Water absorption	%	0,1 max.	< 0,07	ASTM D570

SYSTEM PROPERTIES

System property (inner + outer)	Condition	Value	Test method
Adherence to steel (N/mm)	23 °C / 50 °C	0,9 / 0,09	EN 12068 Annex C
Adherence to PE mill coating (N/mm)	23 °C / 50 °C	0,8 / 0,1	EN 12068
Adherence to EP mill coating (N/mm)	23 °C / 50 °C	0,7 / 0,2	EN 12068
Tape to tape: inner-inner / inner-outer / outer-outer (N/mm)	23 °C	2,7 / 2,6 / 2,5	EN 12068 Annex B
Tape to tape: inner-inner / inner-outer / outer-outer (N/mm)	50 °C	0,3 / 0,4 / 0,3	EN 12068 Annex B
Insulation resistance (Ω·m ²)	—	1 × 10 ⁸	EN 12068
Impact resistance (J)	23 °C	18	EN 12068
Cathodic disbondment (mm r)	23 °C / 50 °C	7 / 27	EN 12068
Lap shear strength to steel / PE / EP (N/mm ²)	—	0,05 / 0,05 / 0,05	EN 12068

i System approved according to EN 12068 Class C50 (formerly DIN 30672).



3-PLY TAPE COATING SYSTEM EN 12068 C50 · 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 3-ply inner tape 0,80 mm
- 4 Outer tape 0,80 mm

EQUIPMENT LIST

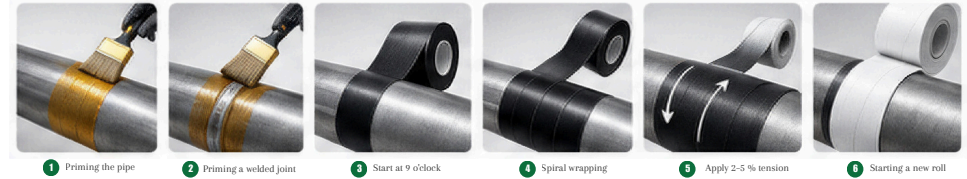
- ✓ Power wire brush, scraper or blast-cleaning equipment (optional)
- ✓ Brush or roller and cleaning solvent
- ✓ Utility knife, overalls, gloves and eye protection
- ✓ Cleaning cloth, hand cleaner and barrier cream

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 3-ply 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 3-ply 0,80 mm	50 / 100 / 150	30	12 / 6 / 4
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.

