Introduction to 3M™ Scotchkote™ Pipe Coatings (formerly COPON Pipe Linings)

Internal & External Pipe Coatings

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- Introduction
- Internal flow liner (flow coating) for gas pipelines
- Internal linings for aviation fuel pipelines
- Internal lining for drinking and waste water pipelines
- External joint and pipe coating
Advanced Polymer Technology since 1882
Introduction to 3M E Wood (formerly COPON Pipelinings)

- Specialises in development and manufacture of liquid internal & external pipe coatings
  - Pioneers of Internal Flow Efficiency Coating for Gas Pipelines
- Queen’s Award for Enterprise (2006)
- ISO 9001 / ISO 14001 Accredited
- Over 45 year’s experience serving Pipeline Industry
- Export to over 85 countries worldwide
- Supported by use in over 140,000 km of pipelines –
  - Gas, Oil, Water, Aviation Fuel, Petrochemical
Innovative Research
Quality Systems

- **ISO 9001**
  - More rigorous than ISO 9002

- **ISO 14001**
  - Environmental Management
Advanced Technology

Innovative Research

Award Winning
Core Pipe Coating Products

- **Scotchkote EP2306 Series** (formerly Copon EP2306 Series)
  - *Internal Flow Coatings for Gas Pipelines*
    - 48%, 75% and 100% Solids versions available
- **Scotchkote EA4 2217** (formerly Copon EA4 2217)
  - *Internal Lining for Aviation Fuel Pipelines*
- **Scotchkote 162 PWX** (formerly Copon Hycote 162 PWX)
  - *Internal Lining for Drinking Water Pipelines*
- **Scotchkote 162 HB** (formerly Copon Hycote 162 HB)
  - *Internal Lining for Sea Water, Processed Water, Waste Water*
- **Scotchkote 165 Series** (formerly Copon Hycote 165 Series)
  - *External Joint Coating & Pipe Protection for Diverse Service Pipelines*
Typical Worldwide Pipeline Projects

- West-East Gas Pipeline, China
  - 4,200 km x 40 in
- Langeled Gas Pipeline, Norway
  - 1200 km x 30 & 40 in
- Salahlah Gasline, Oman
  - 700 km x 28 in
- Dolphin Gas Pipeline, UAE
  - 370 km x 32 in
- Statoil Pipelines, North Sea
  - 2000 km x 48 in
- Balgzand Gas Pipeline, Holland
  - 220 km x 36 in
- BP Forties Line, North Sea
  - 145 km x 36 in
- Blue Stream Pipeline, Russia
  - 2 x 385 km x 28 in
- Inter Refineries (Aviation Fuel) Pipeline Project, UAE
  - 400 km x 20 in
- Yemen LNG Pipeline
  - 320 km x 36 in (External Joints)
Internal Lining for Aviation Fuel Pipelines

Internal & External Pipe Coatings
Scotchkote EA4 2217
Internal Lining for Aviation Fuel Pipelines

- 55% Solids product
- Film build: 125 microns dft in a single coat
- Also suitable for mixed / refined product service
- Application of one-coat of Copon EA4 2217
  - Two-component solvent based epoxy
- Approval for contact with Aviation Fuel – Major Oil Companies – Air BP, SHELL…
International practice is to internally coat Aviation Fuel and Mixed Product Pipelines:

- *Product Purity – sealed surface – no contamination to product*
- *Corrosion protection - storage and commissioning*
- *Easier product switch*
- *Improved product flow: 5-20%*
- *Pigging – efficient. Product purity maintained Risk of removing mill scale and debris with un-coated pipe*
Scotchkote EA4 2217 – Summary

- Fully approved by Air BP, SHELL…
  - Strict leaching tests carried out
- Worldwide use
- Simple, single coat application, 125 microns dft
- Low cost – single coat, low dft
- Allows for bending at site of coated pipes – saving in fittings
- International practice – not to coat joints
Worldwide Pipeline Projects

- Jubail-Dubai Airport
  - 60 km x 10 in
  - Jet A1 Aviation Fuel
- Exxon Midline Pipeline
  - Hundreds of kilometres
  - Mixed Product
- Kawasaki Steel – Japan
  - 250 km x 10 in
  - Jet A1 Aviation Fuel
- Schiphol Airport
  - 15 km x 8 in
  - Jet A1 Aviation Fuel
- Mossmorran Pipeline
  - 50 km x 18 in
  - Mixed Product
- Stockholm Jet Fuel Pipeline
  - 25 km x 12 in
  - Jet A1 Aviation Fuel
- THAPP Thailand Pipeline
  - 234 km x 24 in
  - Mixed Product
- Melaka-Klia Shell Pipeline
  - Hundreds of kilometres
  - Multi Products
- Esso Petroleum Pipeline
  - 400 km x 12 in
  - Petroleum Product
Other Major International Airports:

- East Midlands (UK), Luton (UK),
- Tokyo (Japan),
- Moscow (Russia),
- Jeddah & Riyadh (Saudi Arabia), Munich (Germany), Bruseels (Belgium), Vienna (Austria), Paris (France), Olso (Norway),
- Hong Kong
- and various airports in South Africa, India, USA, Switzerland and Italy
UK Royal Air Force/Military/NATO Bases:

- Lakenheath, Alconbury, Marston, Waddington, Cottesmore, Mildenhall, Wattisham, Wyton, Abingdon, Brize Norton, St Mawgan, Hannington, Marham, Finningley, Binbrook, Coltishall and Boscombe Down, Belize, Limassol, Sardinia