



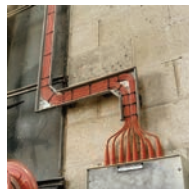
**CONNECT AND PROTECT**

# Mineral Insulated Wiring Cable System

  
**nvent**

**PYROTENAX**

# nVent PYROTENAX MI The Ultimate Fire Survival MI Wiring Cable System for Versatility and Ultimate Fire Survival Performance



nVent PYROTENAX MI Cable Systems were installed when fire broke out in the Channel Tunnel in November 1996. Resisting extreme temperatures that destroyed concrete and welded rails, the Pyro MI Wiring Cable allowed emergency lighting to operate for the safe evacuation of passengers; proving its superior fire survival capability.

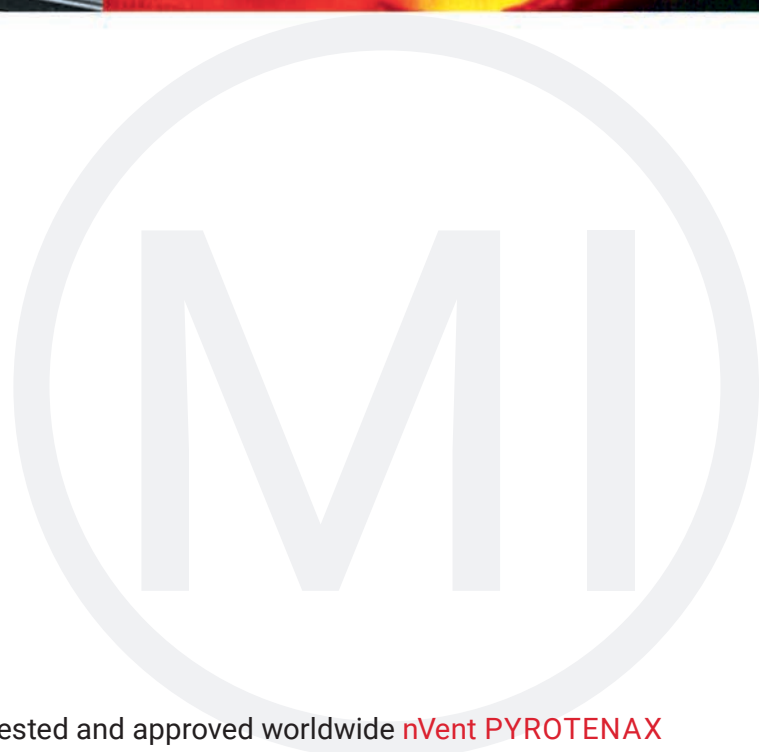


**Pyro MI Fire Survival Cable System** - provides the ideal solution to many difficult and demanding wiring installations making a permanent and dependable wiring cable system for all low and medium voltage applications. Safe in hazardous installations and radio active environments. Exceeds all world wide fire performance standards. The Pyro MI Cable System is the natural choice for domestic, commercial and industrial applications.



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**Pyro MI** Tried, tested and approved worldwide **nVent PYROTENAX**

# Pyro MI Enhanced Grade Wiring Cable System

## PYRO MI RANGE

The standard range of Pyro MI Cable provides the ideal solution for almost all electrical circuits in the low voltage category.

Two voltage grades - 500 and 750 Volts, are available with conductors from 1.0 sq.mm to 240 sq.mm. A full range of complementary accessories and tools provides a complete wiring system supplied and supported by the "Genuine nVent PYROTENAX" component assurance.

## PYRO MI BENEFITS

- ▶ Pyro MI survives the fire test requirements for enhanced grade cables as defined in BS 5839: part 1
- ▶ Peace of mind from the third party (LPCB) approval for categories C, W and Z in BS 6387
- ▶ Also attains categories C, W and Z of BS 6387 with one single cable sample

## PYRO MI CONSTRUCTION

With a basic inorganic construction of a copper sheath and conductors, together with a mineral insulant, the cable provides a unique combination of dependability, versatility and permanence.

This construction, with the melting points of 1083°C and 2800°C for the copper and the insulant respectively, provides the unsurpassed Fire Survival properties which enable the cable to continue to carry current at temperatures in excess of 1000°C.

## PYRO MI CONSTRUCTION CHARACTERISTICS

- ▶ Fireproof
- ▶ High Operating Temperatures
- ▶ Inherent Flameproof Barrier
- ▶ Zero Energy
- ▶ Non-Ageing
- ▶ Great Mechanical Strength
- ▶ Small Overall Diameter
- ▶ Pliable
- ▶ Wiring Cable and Conduit Combined
- ▶ Competitive Installed Cost
- ▶ High Degree of Electrical Screening
- ▶ Radiation Resistant
- ▶ Integral Earth Continuity
- ▶ High Corrosion Resistance
- ▶ Waterproof

Copper  
Conductor

Compressed  
Mineral Insulant

Copper  
Sheath

Halogen Free LSF  
Outer Covering

Standard colours are  
Orange, Red, White  
and Black. Other  
colours such as Stone,  
Blue, Grey etc. are  
also available subject  
to minimum order  
requirements.



# Pyro Twist Cable System

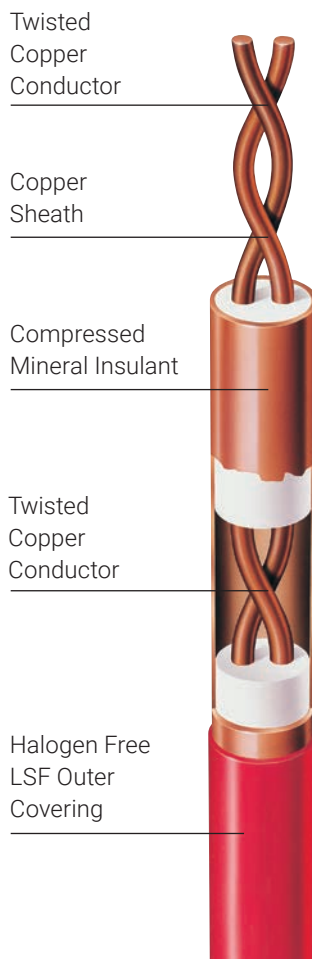
## PYRO MI RANGE

Pyro Twist is a range of communication and signal cables for life preservation and integrated building management systems.

They have been developed from the proven characteristics of Pyro MI to maintain the security of vital signals in communication and data networks, particularly in hostile conditions.

## PYRO TWIST ADDITIONAL CHARACTERISTICS AND ADVANTAGES

- ▶ Twisted conductor configuration with a solid copper screen
- ▶ Pyro Twist available in red (other colours available upon request)
- ▶ Pyro Twist uses standard accessories for the equivalent Pyro MI Light Duty cable size
- ▶ Pyro Twist can be installed and terminated by following the normal procedures for Pyro MI Cable
- ▶ The twisted copper conductor configuration enhances the EMC noise rejection characteristics, reducing the possibility of system malfunction
- ▶ The exceptionally low impedance of the solid copper sheath provides a superior EMC screening than other cable systems
- ▶ Minimal smoke obscuration in the event of fire



Pyro MI survived in this high rise office complex fire





# Pyro MI Typical Applications

Moving Walkways

Car Parking

Public Buildings

Metro Links

Hotels

Shopping Complexes

Building Services

Offshore

Rail Tunnels

Road Tunnels

Dock and Harbour

Original Equipment

Building Exteriors

Power Generating

Escalators

Transport/Interchanges

Petrol Stations

Petrochemicals

Airport

Water Treatment



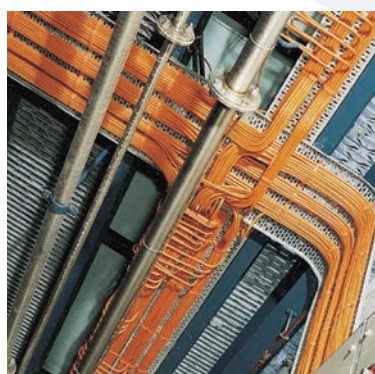
## PYRO MI WORLDWIDE MAJOR PROJECTS

The following is a very brief list of products where Pyro MI Cables have been extensively specified and installed in situations demanding circuit integrity in the most critical situations.

### Thermal Power Stations - Gas, Coal, Oil and Nuclear

| Project         | Location       |
|-----------------|----------------|
| Fawley          | United Kingdom |
| Fiddler's Ferry | United Kingdom |
| Doha West       | Kuwait         |
| Nkand Mine      | Zambia         |
| Ap Lei Chan     | Hong Kong      |
| Heysham         | United Kingdom |
| Kalpakkam       | India          |
| Torness         | United Kingdom |
| Hartlepool      | United Kingdom |
| Marvikien       | Sweden         |
| Latina          | Italy          |
| Solovakia Al    | Slovakia       |
| Torre           | Italy          |
| Kalkar (FBR)    | Germany        |
| Dungeness (A&B) | United Kingdom |
| Rihand          | India          |
| Trillo (PWR)    | Spain          |
| Monju (FBR)     | Japan          |
| Sabiya          | Kuwait         |
| Taweelaah'B'    | Abu Dhabi      |
| Blackpoint      | Hong Kong      |

### Production Platforms - Oil and Gas



### Major Oil Companies Specifying nVent PYROTENAX for On and Offshore Installations.

#### Reference List

Kuwait Oil Company (KOC)  
Kuwait National Petroleum Co (KNPC)  
ARAMCO  
Petromin - Saudi Arabia  
National Iranian Oil Company  
Royal Dutch Shell - Netherlands  
Union Oil  
EXXON  
Abu Dhabi National Oil Company (ADNOC)  
Shell UK  
Chevron, Statoils  
Qatar General Petroleum Corporation  
BP Chemicals  
Oil & Natural Gas Company - India (ONGC).



Pyro MI survived in this power station fire

# Pyro MI Standards & Approvals

Throughout the world Pyro MI Fire Survival Wiring products are used for vital communication and power distribution.

## Pyro MI Middle East Major Projects

Pyro MI Cables have been selected and approved for use in Middle East Projects by an impressive number of renowned specifiers as shown below.

The list of projects where Pyro MI Cables have been installed is much longer than, those mentioned below.

## Project References

Dubai International Airport  
Bahrain International Airport  
Riyadh International Airport  
Muscat International Airport  
Kuwait International Airport  
North Dome - QGPC Qatar  
Gulf Hotel - Bahrain  
Sheraton - Doha  
Alba - Bahrain Aluminium Smelter  
Dubai - Dubai Aluminium Smelter  
Sharjah Suk  
Dubai 'G' Power Station  
Dubai 'F' Power Station  
Sabiya Power Station Kuwait  
ADNOC Das Island - Gas Storage  
Doha East Power Station - Kuwait  
Doha West Power Station - Kuwait  
Etisalat Telecommunications  
Building - Abu Dhabi  
Mew Sub-Stations  
Holiday Inn Crown Plaza - Dubai  
Riyadh University Hospital  
Al Zoor Power - Kuwait  
Ras Abu Fontas P S Qatar  
ADNOC HQ Building Abu Dhabi  
Bahrain Islamic Bank  
BATELCO - Bahrain  
National Bank of Dubai  
Al Wasl Hospital - Dubai  
Chamber of Commerce  
Buildings - Dubai  
Hilton Apartments - Kuwait  
SECO Sub-Station - Saudi Arabia  
Diplomatic Area - Riyadh  
Jubail Port - Saudi Arabia  
Dammam Port - Saudi Arabia  
Jeddah Port - Saudi Arabia  
Jebel Ali Port - Dubai

## Road Tunnels

| Project          | Location                   |
|------------------|----------------------------|
| Kai Tak          | Kowloon - Hong Kong        |
| Mersey Kingsway  | Liverpool - United Kingdom |
| Mersey Queensway | Liverpool - United Kingdom |
| Tyne             | Newcastle - United Kingdom |
| Lewes            | Lewes - United Kingdom     |

## Rail Tunnels

Brussels Metro, London Underground, Mass Transit Rail Loop, Montreal Metro, Newcastle Metro, Paris Metro, Glasgow Underground, Merseyside Underground Loop, Channel Tunnel, Vienna Metro

## Cables

nVent PYROTENAX MI Wiring Cables are manufactured, tested in accordance with, and LPCB approved to, BS EN 60702-1.

nVent PYROTENAX MI Wiring Cables are LPCB approved to BS 8434-2, BS 5839-1 Clause 26.2 (Enhanced), BS EN 50267-1, and BS EN 50200 Class PH 120. nVent PYROTENAX MI Wiring Cables have also been witnessed tested, by Lloyds Register, to the test requirements of BS7346-6.

## Quality Certification



## Terminations

nVent PYROTENAX Terminations are tested in accordance with BS EN 60702: Part 2. nVent PYROTENAX Terminations are Certified for use in potentially explosive atmospheres.

For ATEX approved glands, please contact nVent Thermal Sales for support.

nVent PYROTENAX cable drums, reels and termination packaging are marked with the CE mark as required by the low voltage directive, except for Terminations primarily intended for installation in potentially explosive atmospheres which are not marked, because the directive does not apply.

## Other Standards and Codes of Practice Referring to MI Cables:

**BS 8434-** Methods of test for assessment of the fire integrity of electric cables Part1: Test for unprotected small cables for use in emergency circuits - BS EN 50200 with the addition of water spray.

Part 2: Test for unprotected small cables for use in emergency circuits - BS EN 50200 with a 930°C flame and with water spray.

**BS 6387-** 1994 Performance Requirements for Cables Required to Maintain Circuit Integrity under Fire Conditions.

**IEC 60331-** Tests for Electric Cables under fire conditions.

**Underwriters Laboratories-** UL2196-USA, ULC-S139-Canada. Tests for fire resistant cables.

**London Underground-** Fire Survival Cable (MICC) EME-SP-14-028-A1.

**BS EN 60702-1 & 60702-2-** Mineral Insulated Cables and their Terminations.

**BS 7671-** Requirements for Electrical Installations (IEE Wiring Regulations).

**BS 5588-** Fire Precautions in the design, construction and use of buildings,

**BS 5266-** Emergency Lighting.

**BS 60079-** Code of Practice for the selection, installation and maintenance of electrical apparatus for use in Potentially Explosive Atmospheres.

**BS 5454-** Storage and exhibition of Archival Documents.

**BS 5839-** Fire detection and alarm systems in Buildings.

The Institute of Petroleum Guidance for the design, Construction, Modification and Maintenance of Petrol Filling Stations. Electrical Installations.

**C.I.O.** Lighting and Wiring of Churches.

# Fire Performance

## Pyro MI easily meets and exceeds the BS 5839-1 Enhanced and Standard Grade Requirements

The BS 5839-1 (Fire detection and alarm systems for buildings – Part 1: Code of practice for system design, installation, commissioning and maintenance) describes two levels of fire performance for fire rated cabling for fire alarm systems. These performance levels have now been published within a British Standard. BS 8434 Parts 1 and 2 (Methods of test for the assessment of the fire integrity of electric cables.

Pyro MI easily complies with and exceeds all the requirements for **Enhanced Grade** and **Standard Grade** described within these new standards and is LPCB approved.

Pyro MI is the obvious choice for both **Standard Grade** and **Enhanced Grade** critical signal paths.

### Fire Performance BS 6387 Performance Requirements for Cables Required to Maintain Circuit Integrity under Fire Conditions.

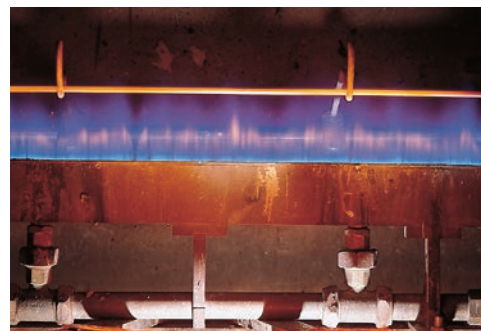
This standard details the following tests to categorise cables according to their fire withstand capabilities.

#### Resistance to Fire 950°C for 3 hours – Category C

The cable is tested by exposure to gas burner flames while passing a current at its rated voltage. Four survival categories are defined in the Performance Table below.

##### Performance Table

|                          | Symbol   | Pyro MI          |
|--------------------------|----------|------------------|
| 650°C for 3 hours        | A        | Surpasses        |
| 750°C for 3 hours        | B        | Surpasses        |
| <b>950°C for 3 hours</b> | <b>C</b> | <b>Surpasses</b> |
| 950°C for 20 minutes     | S        | Surpasses        |



#### Resistance to Fire with Water Spray 650°C – Category W

A new sample of cable is exposed to flames at 650°C for 15 minutes whilst passing a current at the rated voltage and then the spray is turned on to give exposure to both fire and water for a further 15 minutes.

A single survival category is defined in the Performance Table below.

##### Performance Table

|                   | Symbol | Pyro MI   |
|-------------------|--------|-----------|
| 650°C for 3 hours | W      | Surpasses |



#### Resistance to Fire with Mechanical Shock 950°C Category Z

The final requirement is mechanical shock damage. A fresh sample of cable is mounted on a backing panel in an S-bend and is exposed to flames whilst the backing panel is struck with a solid steel bar the same diameter as the cable under test every 30 seconds for 15 minutes. Whilst the cable has been exposed to temperatures as defined in the Performance Table below.

##### Performance Table

|              | Symbol   | Pyro MI          |
|--------------|----------|------------------|
| 650°C        | X        | Surpasses        |
| 750°C        | Y        | Surpasses        |
| <b>950°C</b> | <b>Z</b> | <b>Surpasses</b> |



**“Beyond the Standard...**  
Pyro MI Cable can easily comply and withstand the most onerous categories of C, W and Z using one single Cable Sample



# London Underground Limited Test for Fire Survivable Cable

To fully assess the Fire Survival qualities of Pyro MI Cable and in response to requests from major specifiers, more rigorous testing criteria have been devised. The aim of the tests is to extend the conditions of BS 6387 to effectively recreate a more realistic fire situation by exposing the cable to significant thermal and physical shock.

In a fire environment cable has to survive not only the extremes of high temperature but also the impact from falling debris together with water exposure from fire fighting equipment.

In the aftermath of a fire the cable must also withstand bending, further impact and possible water immersion during building and structural restoration.



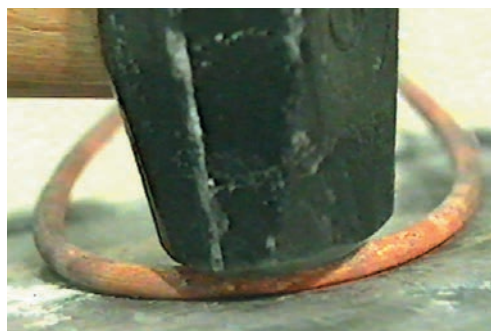
Cable struck directly with a steel bar (at the centre of the burner) every 10 minutes during a 3 hour period in a flame at 950°C.



Cable then sprayed with water for 15 minutes whilst still being struck by the bar.



Cable then bent at the point of impact through 180°.



Further mechanical impact shock.



Close-up of cable subjected to the LUL Test.



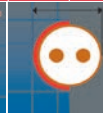
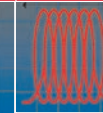
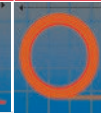
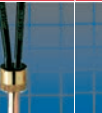
Finally immersed in water for 1 hour whilst energised at its rated voltage.



Pyro MI survived in this department store fire

# Pyro MI Cable System Data and Accessory Selection

## Pyro MI Enhanced Grade Fire Survival Cable

| CABLE SIZE<br>REFERENCE BARE<br>CABLE CCSF<br>COVERED CCM                        | NUMBER & CROSS<br>SECTIONAL<br>AREA OF<br>CONDUCTORS                              | CABLES EXPOSED TO TOUCH                                                           |                                                                                   |                                                                                   | CABLE<br>DIAMETER                                                                 |                                                                                   | APPROXIMATE<br>NOMINAL<br>CONDUCTOR<br>DIAMETER                                   | APPROXIMATE<br>LONGEST BARE<br>COIL LENGTHS FOR<br>ESTIMATING<br>PURPOSES                                                           | COIL<br>DIAMETERS                                                                   | APPROX. WEIGHT<br>PER 1000 M                                                        |                                                                                     | SCREW ON SEAL<br>105°C                                                              |                                                                                     |                                                                                     |                                                                                     |    |
|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----|
|                                                                                  |                                                                                   | CURRENT RATINGS                                                                   |                                                                                   | VOLT DROP                                                                         | LSF                                                                               | BARE                                                                              |                                                                                   |                                                                                                                                     |                                                                                     | LSF                                                                                 | BARE                                                                                | PLAIN<br>SEAL                                                                       | EARTH TAIL<br>SEAL                                                                  |                                                                                     |                                                                                     |    |
|                                                                                  |                                                                                   | LSF                                                                               | BARE                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |    |
|  |  |  |  |  |  |  |  |                                                   |  |  |  |  |  |  |  |    |
| Followed<br>By                                                                   | No. x sq mm                                                                       | amps**                                                                            | amps**                                                                            | mV**                                                                              | mm                                                                                | mm                                                                                | mm                                                                                | mm                                                                                                                                  | mm                                                                                  | kg                                                                                  |                                                                                     | RPS                                                                                 |                                                                                     | RPSL                                                                                |                                                                                     |    |
| Light Duty 500V Grade                                                            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |    |
| 2L1                                                                              | 2x1                                                                               | 19.5                                                                              | 17.5                                                                              | 42                                                                                | 6.6                                                                               | 5.1                                                                               | 1.13                                                                              | +1800◆                                                                                                                              | 500                                                                                 | 125                                                                                 | 104                                                                                 | 2L1                                                                                 | 20                                                                                  | 2L1                                                                                 | 20                                                                                  |    |
| 2L1.5                                                                            | 2x1.5                                                                             | 25                                                                                | 22.5                                                                              | 28                                                                                | 7.2                                                                               | 5.7                                                                               | 1.39                                                                              | +1400◆                                                                                                                              | ++500                                                                               | 159                                                                                 | 136                                                                                 | 2L1.5                                                                               | 20                                                                                  | 2L1.5                                                                               | 20                                                                                  |    |
| 2L2.5                                                                            | 2x2.5                                                                             | 33                                                                                | 30                                                                                | 17                                                                                | 8.1                                                                               | 6.6                                                                               | 1.77                                                                              | +1100◆                                                                                                                              | ++500                                                                               | 213                                                                                 | 187                                                                                 | 2L2.5                                                                               | 20                                                                                  | 2L2.5                                                                               | 20                                                                                  |    |
| 2L4                                                                              | 2x4                                                                               | 44                                                                                | 40                                                                                | 10                                                                                | 9.4                                                                               | 7.7                                                                               | 2.25                                                                              | 800                                                                                                                                 | 915                                                                                 | 282                                                                                 | 248                                                                                 | 2L4                                                                                 | 20                                                                                  | 2L4                                                                                 | 20                                                                                  |    |
| 3L1*                                                                             | 3x1                                                                               | 16.5                                                                              | 15                                                                                | 36                                                                                | 7.3                                                                               | 5.8                                                                               | 1.13                                                                              | +1500                                                                                                                               | 500                                                                                 | 159                                                                                 | 136                                                                                 | 3L1                                                                                 | 20                                                                                  | 3L1                                                                                 | 20                                                                                  |    |
| 3L1.5*                                                                           | 3x1.5                                                                             | 21                                                                                | 19                                                                                | 24                                                                                | 7.9                                                                               | 6.4                                                                               | 1.39                                                                              | +1100◆                                                                                                                              | 500                                                                                 | 201                                                                                 | 176                                                                                 | 3L1.5                                                                               | 20                                                                                  | 3L1.5                                                                               | 20                                                                                  |    |
| 3L2.5*                                                                           | 3x2.5                                                                             | 28                                                                                | 25                                                                                | 14                                                                                | 9.0                                                                               | 7.3                                                                               | 1.77                                                                              | 900                                                                                                                                 | 915                                                                                 | 256                                                                                 | 223                                                                                 | 3L2.5                                                                               | 20                                                                                  | 3L2.5                                                                               | 20                                                                                  |    |
| 4L1*                                                                             | 4x1                                                                               | 16                                                                                | 14.5                                                                              | 36                                                                                | 7.8                                                                               | 6.3                                                                               | 1.13                                                                              | +1200                                                                                                                               | 500                                                                                 | 187                                                                                 | 162                                                                                 | 4L1                                                                                 | 20                                                                                  | 4L1                                                                                 | 20                                                                                  |    |
| 4L1.5*                                                                           | 4x1.5                                                                             | 21                                                                                | 19                                                                                | 24                                                                                | 8.5                                                                               | 7.0                                                                               | 1.39                                                                              | +900                                                                                                                                | 500                                                                                 | 230                                                                                 | 203                                                                                 | 4L1.5                                                                               | 20                                                                                  | 4L1.5                                                                               | 20                                                                                  |    |
| 4L2.5*                                                                           | 4x2.5                                                                             | 28                                                                                | 25                                                                                | 14                                                                                | 9.8                                                                               | 8.1                                                                               | 1.77                                                                              | 700                                                                                                                                 | 915                                                                                 | 313                                                                                 | 277                                                                                 | 4L2.5                                                                               | 20                                                                                  | 4L2.5                                                                               | 20                                                                                  |    |
| 7L1                                                                              | 7x1                                                                               | 11                                                                                | 10                                                                                | 42                                                                                | 9.3                                                                               | 7.6                                                                               | 1.13                                                                              | 800                                                                                                                                 | 915                                                                                 | 269                                                                                 | 236                                                                                 | 7L1                                                                                 | 25                                                                                  | 7L1                                                                                 | 25                                                                                  |    |
| 7L1.5                                                                            | 7x1.5                                                                             | 14                                                                                | 12.5                                                                              | 28                                                                                | 10.1                                                                              | 8.4                                                                               | 1.39                                                                              | 600                                                                                                                                 | 915                                                                                 | 332                                                                                 | 295                                                                                 | 7L1.5                                                                               | 25                                                                                  | 7L1.5                                                                               | 25                                                                                  |    |
| 7L2.5                                                                            | 7x2.5                                                                             | 19                                                                                | 17                                                                                | 17                                                                                | 11.4                                                                              | 9.7                                                                               | 1.77                                                                              | 500                                                                                                                                 | 915                                                                                 | 454                                                                                 | 411                                                                                 | 7L2.5                                                                               | 25                                                                                  | 7L2.5                                                                               | 25                                                                                  |    |
| Heavy Duty 750 V Grade                                                           |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |    |
| 1H10*                                                                            | 1x10                                                                              | 90                                                                                | 81                                                                                | 3.6                                                                               | 9.0                                                                               | 7.3                                                                               | 3.57                                                                              | Values quoted are nominal lengths only. Please contact our customer service department for confirmation of exact available lengths. | 950                                                                                 | 915                                                                                 | 273                                                                                 | 240                                                                                 | 1H10                                                                                | 20                                                                                  | 1H10                                                                                | 25 |
| 1H16*                                                                            | 1x16                                                                              | 119                                                                               | 107                                                                               | 2.3                                                                               | 10.0                                                                              | 8.3                                                                               | 4.50                                                                              |                                                                                                                                     | 740                                                                                 | 915                                                                                 | 361                                                                                 | 326                                                                                 | 1H16                                                                                | 20                                                                                  | 1H16                                                                                | 25 |
| 1H25*                                                                            | 1x25                                                                              | 154                                                                               | 139                                                                               | 1.5                                                                               | 11.3                                                                              | 9.6                                                                               | 5.66                                                                              |                                                                                                                                     | 540                                                                                 | 915                                                                                 | 499                                                                                 | 457                                                                                 | 1H25                                                                                | 20                                                                                  | 1H25                                                                                | 32 |
| 1H35*                                                                            | 1x35                                                                              | 187                                                                               | 168                                                                               | 1.1                                                                               | 12.4                                                                              | 10.7                                                                              | 6.66                                                                              |                                                                                                                                     | 435                                                                                 | 1370                                                                                | 632                                                                                 | 585                                                                                 | 1H35                                                                                | 20                                                                                  | 1H35                                                                                | 32 |
| 1H50*                                                                            | 1x50                                                                              | 230                                                                               | 207                                                                               | 0.87                                                                              | 13.8                                                                              | 12.1                                                                              | 7.75                                                                              |                                                                                                                                     | 345                                                                                 | 1370                                                                                | 810                                                                                 | 758                                                                                 | 1H50                                                                                | 25                                                                                  | 1H50                                                                                | 40 |
| 1H70*                                                                            | 1x70                                                                              | 279                                                                               | 251                                                                               | 0.65                                                                              | 15.4                                                                              | 13.7                                                                              | 9.32                                                                              |                                                                                                                                     | 270                                                                                 | 1370                                                                                | 1075                                                                                | 1016                                                                                | 1H70                                                                                | 25                                                                                  | –                                                                                   |    |
| 1H95*                                                                            | 1x95                                                                              | 333                                                                               | 300                                                                               | 0.53                                                                              | 17.7                                                                              | 15.4                                                                              | 10.98                                                                             |                                                                                                                                     | 215                                                                                 | 1370                                                                                | 1413                                                                                | 1324                                                                                | 1H95                                                                                | 25                                                                                  | –                                                                                   |    |
| 1H120*                                                                           | 1x120                                                                             | 382                                                                               | 344                                                                               | 0.46                                                                              | 19.1                                                                              | 16.8                                                                              | 12.33                                                                             |                                                                                                                                     | 185                                                                                 | 1370                                                                                | 1709                                                                                | 1612                                                                                | 1H120                                                                               | 32                                                                                  | –                                                                                   |    |
| 1H150*                                                                           | 1x150                                                                             | 431                                                                               | 388                                                                               | 0.42                                                                              | 20.7                                                                              | 18.4                                                                              | 13.70                                                                             |                                                                                                                                     | 155                                                                                 | 1370                                                                                | 2055                                                                                | 1949                                                                                | 1H150                                                                               | 32                                                                                  | –                                                                                   |    |
| 1H185*                                                                           | 1x185                                                                             | 482                                                                               | 434                                                                               | 0.39                                                                              | 23.2                                                                              | 20.4                                                                              | 15.18                                                                             |                                                                                                                                     | 125                                                                                 | 1370                                                                                | 2514                                                                                | 2370                                                                                | 1H185                                                                               | 32                                                                                  | –                                                                                   |    |
| 1H240*                                                                           | 1x240                                                                             | 537                                                                               | 483                                                                               | 0.36                                                                              | 26.1                                                                              | 23.3                                                                              | 17.33                                                                             |                                                                                                                                     | 98                                                                                  | 1370                                                                                | 3213                                                                                | 3050                                                                                | 1H240                                                                               | 40                                                                                  | –                                                                                   |    |
| 2H1.5                                                                            | 2x1.5                                                                             | 26                                                                                | 23.5                                                                              | 28                                                                                | 9.6                                                                               | 7.9                                                                               | 1.39                                                                              |                                                                                                                                     | 750                                                                                 | 915                                                                                 | 272                                                                                 | 237                                                                                 | 2H1.5                                                                               | 20                                                                                  | 2H1.5                                                                               | 20 |
| 2H2.5                                                                            | 2x2.5                                                                             | 36                                                                                | 32                                                                                | 17                                                                                | 10.4                                                                              | 8.7                                                                               | 1.77                                                                              |                                                                                                                                     | 610                                                                                 | 915                                                                                 | 314                                                                                 | 276                                                                                 | 2H2.5                                                                               | 20                                                                                  | 2H2.5                                                                               | 20 |
| 2H4                                                                              | 2x4                                                                               | 47                                                                                | 42                                                                                | 10                                                                                | 11.5                                                                              | 9.8                                                                               | 2.25                                                                              |                                                                                                                                     | 480                                                                                 | 915                                                                                 | 397                                                                                 | 355                                                                                 | 2H4                                                                                 | 20                                                                                  | 2H4                                                                                 | 25 |
| 2H6                                                                              | 2x6                                                                               | 60                                                                                | 54                                                                                | 7                                                                                 | 12.6                                                                              | 10.9                                                                              | 2.75                                                                              |                                                                                                                                     | 370                                                                                 | 1370                                                                                | 493                                                                                 | 446                                                                                 | 2H6                                                                                 | 20                                                                                  | 2H6                                                                                 | 25 |
| 2H10                                                                             | 2x10                                                                              | 82                                                                                | 74                                                                                | 4.2                                                                               | 14.4                                                                              | 12.7                                                                              | 3.57                                                                              |                                                                                                                                     | 280                                                                                 | 1370                                                                                | 673                                                                                 | 619                                                                                 | 2H10                                                                                | 25                                                                                  | 2H10                                                                                | 32 |
| 2H16                                                                             | 2x16                                                                              | 109                                                                               | 98                                                                                | 2.6                                                                               | 16.4                                                                              | 14.7                                                                              | 4.50                                                                              |                                                                                                                                     | 205                                                                                 | 1370                                                                                | 912                                                                                 | 850                                                                                 | 2H16                                                                                | 25                                                                                  | 2H16                                                                                | 40 |
| 2H25                                                                             | 2x25                                                                              | 142                                                                               | 128                                                                               | 1.65                                                                              | 19.4                                                                              | 17.1                                                                              | 5.66                                                                              |                                                                                                                                     | 150                                                                                 | 1370                                                                                | 1277                                                                                | 1178                                                                                | 2H25                                                                                | 32                                                                                  | 2H25                                                                                | 40 |
| 3H1.5*                                                                           | 3x1.5                                                                             | 22                                                                                | 20                                                                                | 24                                                                                | 10.0                                                                              | 8.3                                                                               | 1.39                                                                              |                                                                                                                                     | 670                                                                                 | 915                                                                                 | 290                                                                                 | 254                                                                                 | 3H1.5                                                                               | 20                                                                                  | 3H1.5                                                                               | 20 |
| 3H2.5*                                                                           | 3x2.5                                                                             | 30                                                                                | 27                                                                                | 14                                                                                | 11.0                                                                              | 9.3                                                                               | 1.77                                                                              |                                                                                                                                     | 520                                                                                 | 915                                                                                 | 364                                                                                 | 323                                                                                 | 3H2.5                                                                               | 20                                                                                  | 3H2.5                                                                               | 25 |
| 3H4*                                                                             | 3x4                                                                               | 40                                                                                | 36                                                                                | 9.1                                                                               | 12.1                                                                              | 10.4                                                                              | 2.25                                                                              |                                                                                                                                     | 420                                                                                 | 1370                                                                                | 460                                                                                 | 415                                                                                 | 3H4                                                                                 | 20                                                                                  | 3H4                                                                                 | 25 |
| 3H6*                                                                             | 3x6                                                                               | 51                                                                                | 46                                                                                | 6                                                                                 | 13.2                                                                              | 11.5                                                                              | 2.75                                                                              |                                                                                                                                     | 345                                                                                 | 1370                                                                                | 575                                                                                 | 526                                                                                 | 3H6                                                                                 | 25                                                                                  | 3H6                                                                                 | 25 |
| 3H10*                                                                            | 3x10                                                                              | 69                                                                                | 62                                                                                | 3.6                                                                               | 15.3                                                                              | 13.6                                                                              | 3.57                                                                              |                                                                                                                                     | 245                                                                                 | 1370                                                                                | 812                                                                                 | 754                                                                                 | 3H10                                                                                | 25                                                                                  | 3H10                                                                                | 32 |
| 3H16*                                                                            | 3x16                                                                              | 92                                                                                | 83                                                                                | 2.3                                                                               | 17.9                                                                              | 15.6                                                                              | 4.50                                                                              |                                                                                                                                     | 180                                                                                 | 1370                                                                                | 1124                                                                                | 1034                                                                                | 3H16                                                                                | 25                                                                                  | 3H16                                                                                | 40 |
| 3H25*                                                                            | 3x25                                                                              | 120                                                                               | 108                                                                               | 1.45                                                                              | 20.5                                                                              | 18.2                                                                              | 5.66                                                                              |                                                                                                                                     | 135                                                                                 | 1370                                                                                | 1549                                                                                | 1444                                                                                | 3H25                                                                                | 40                                                                                  | 3H25                                                                                | 40 |
| 4H1.5*                                                                           | 4x1.5                                                                             | 23                                                                                | 20.5                                                                              | 24                                                                                | 10.8                                                                              | 9.1                                                                               | 1.39                                                                              |                                                                                                                                     | 560                                                                                 | 915                                                                                 | 345                                                                                 | 305                                                                                 | 4H1.5                                                                               | 20                                                                                  | 4H1.5                                                                               | 20 |
| 4H2.5*                                                                           | 4x2.5                                                                             | 30                                                                                | 27                                                                                | 14                                                                                | 11.8                                                                              | 10.1                                                                              | 1.77                                                                              |                                                                                                                                     | 445                                                                                 | 1370                                                                                | 428                                                                                 | 384                                                                                 | 4H2.5                                                                               | 20                                                                                  | 4H2.5                                                                               | 25 |
| 4H4*                                                                             | 4x4                                                                               | 40                                                                                | 36                                                                                | 9.1                                                                               | 13.1                                                                              | 11.4                                                                              | 2.25                                                                              |                                                                                                                                     | 350                                                                                 | 1370                                                                                | 556                                                                                 | 507                                                                                 | 4H4                                                                                 | 25                                                                                  | 4H4                                                                                 | 25 |
| 4H6*                                                                             | 4x6                                                                               | 51                                                                                | 46                                                                                | 6                                                                                 | 14.4                                                                              | 12.7                                                                              | 2.75                                                                              |                                                                                                                                     | 270                                                                                 | 1370                                                                                | 698                                                                                 | 644                                                                                 | 4H6                                                                                 | 25                                                                                  | 4H6                                                                                 | 32 |
| 4H10*                                                                            | 4x10                                                                              | 68                                                                                | 61                                                                                | 3.6                                                                               | 16.5                                                                              | 14.8                                                                              | 3.57                                                                              |                                                                                                                                     | 205                                                                                 | 1370                                                                                | 974                                                                                 | 911                                                                                 | 4H10                                                                                | 25                                                                                  | 4H10                                                                                | 32 |
| 4H16*                                                                            | 4x16                                                                              | 89                                                                                | 80                                                                                | 2.3                                                                               | 19.6                                                                              | 17.3                                                                              | 4.50                                                                              |                                                                                                                                     | 145                                                                                 | 1370                                                                                | 1386                                                                                | 1286                                                                                | 4H16                                                                                | 32                                                                                  | 4H16                                                                                | 40 |
| 4H25*                                                                            | 4x25                                                                              | 116                                                                               | 104                                                                               | 1.45                                                                              | 22.9                                                                              | 20.1                                                                              | 5.66                                                                              |                                                                                                                                     | 110                                                                                 | 1370                                                                                | 1947                                                                                | 1805                                                                                | 4H25                                                                                | 40                                                                                  | 4H25                                                                                | 40 |
| 7H1.5                                                                            | 7x1.5                                                                             | 15.5                                                                              | 14                                                                                | 28                                                                                | 12.5                                                                              | 10.8                                                                              | 1.39                                                                              |                                                                                                                                     | 385                                                                                 | 1370                                                                                | 479                                                                                 | 432                                                                                 | 7H1.5                                                                               | 25                                                                                  | 7H1.5                                                                               | 25 |
| 7H2.5                                                                            | 7x2.5                                                                             | 21                                                                                | 19                                                                                | 17                                                                                | 13.8                                                                              | 12.1                                                                              | 1.77                                                                              |                                                                                                                                     | 310                                                                                 | 1370                                                                                | 611                                                                                 | 559                                                                                 | 7H2.5                                                                               | 25                                                                                  | 7H2.5                                                                               | 25 |
| 12H1.5                                                                           | 12x1.5                                                                            | 13                                                                                | 11.5                                                                              | 28                                                                                | 15.8                                                                              | 14.1                                                                              | 1.39                                                                              |                                                                                                                                     | 210                                                                                 | 1370                                                                                | 772                                                                                 | 712                                                                                 | 12H1.5                                                                              | 32                                                                                  | –                                                                                   |    |
| 12H2.5                                                                           | 12x2.5                                                                            | 17                                                                                | 15.5                                                                              | 17                                                                                | 17.9                                                                              | 15.6                                                                              | 1.77                                                                              |                                                                                                                                     | 175                                                                                 | 1370                                                                                | 1001                                                                                | 911                                                                                 | 12H2.5                                                                              | 32                                                                                  | –                                                                                   |    |
| 19H1.5                                                                           | 19x1.5                                                                            | 11                                                                                | 10                                                                                | 28                                                                                | 18.9                                                                              | 16.6                                                                              | 1.39                                                                              |                                                                                                                                     | 150                                                                                 | 1370                                                                                | 1088                                                                                | 992                                                                                 | 19H1.5                                                                              | 40                                                                                  | –                                                                                   |    |