

















Specified Technologies Inc. (STI) was founded over 26 years ago and has quickly become the firestop industry leader through service, technology and innovation. STI has earned a reputation as the firestop authority by providing premium quality, high performance and technologically advanced fire safety products and solutions that save lives and protect property.

Firestop is our only business and our experienced team of experts exclusively develops fire protection products and systems. Our state-ofthe-art research and development center includes one of the most advanced fire furnaces in the world and is staffed by engineers and scientists who understand the dynamics of passive fire protection. Our extensive product line preserves and protects the integrity of vessels and platforms and is manufactured under the strictest quality control standards to withstand the forces of nature, the threat of fire, and the test of time.

STI'S GLOBAL REACH SEVEN REGIONAL OFFICES AROUND THE GLOBE



STI Marine is a Division of STI

Specified Technologies Inc. was started in 1990 and is dedicated solely to firestopping.

We are present in over 50 cities strategically located across the globe.

STI formed STI Marine Firestop in 2011 and introduced the EZ-Path Marine Fire Rated Pathway.

STI Marine Europe was setup in 2016.

STI has warehouses in New Jersey, Memphis, TN, Reno, NV, Shanghai, Guangzhou, Singapore, Dubai and Rotterdam.







STI MARINE EUROPE



James P. Stahl

Vice President & General Manager Marine

20+ years with STI. Extensive background in fire testing and product development. 20+ patents in the field of fire protection. Member, ASTM Committee F25 on Ships and Marine Technology.



Ruben Wansink

Regional Manager Europe

Since April 2016 at STI. Extensive marine related experience, having spent the last ten years in various sales and marketing related roles for a large multinational active within the marine market.



Carlo Luisi

Technical Marine Manager Europe

Worked at a major European shipyard for 10 years, Naval Architect involved in quality, pipe and electrical departments.

STI MARINE GLOBAL



Global Marine Sales team





Applications

STI Solutions





Cables



Steel pipes



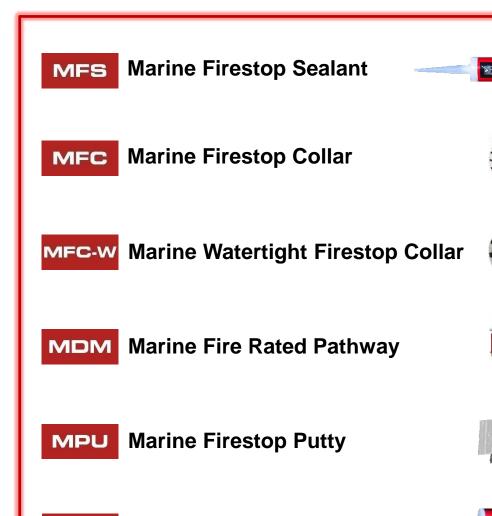
Plastic pipes



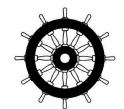
Multiple penetrants



GRE/GRP pipes











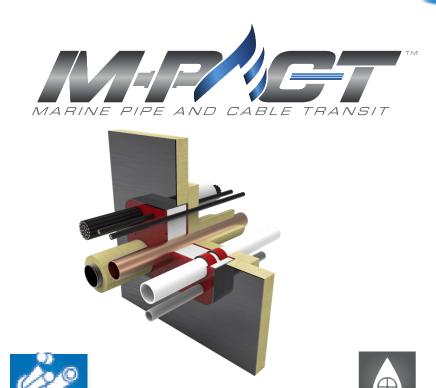
Marine Rubber Foam

HIGHLIGHT: 2 Distinct Systems





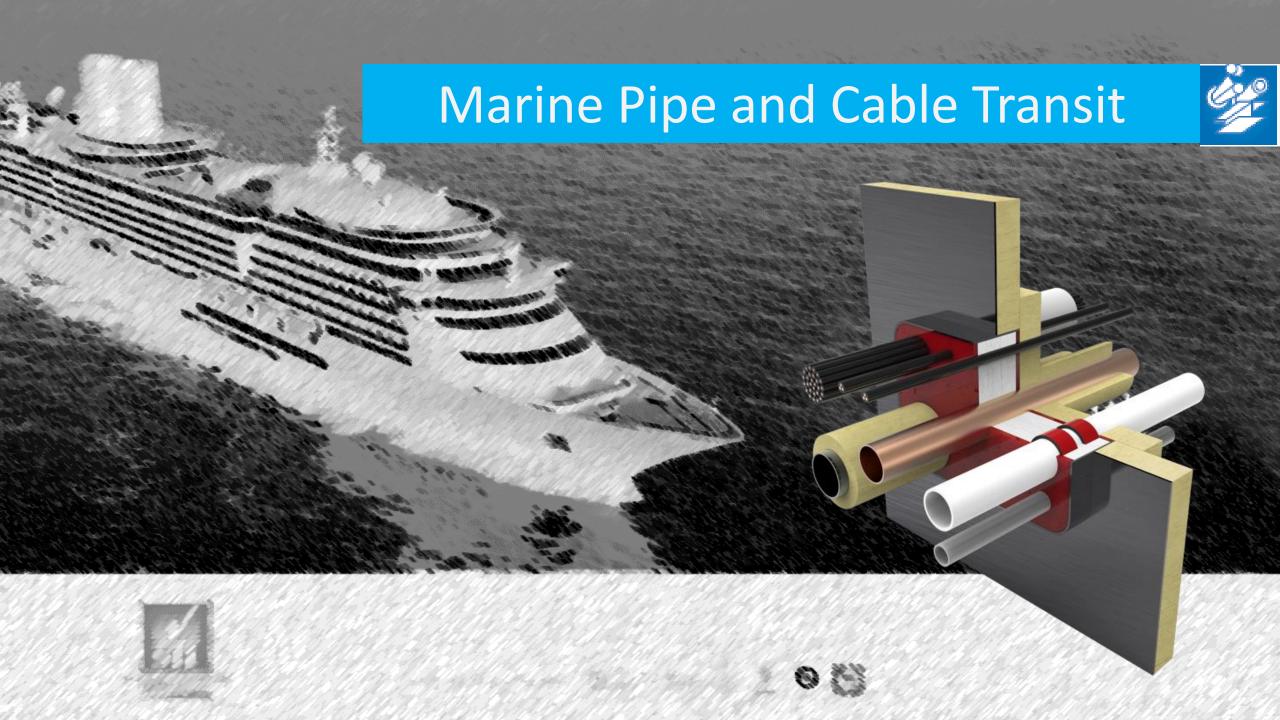




Marine Pipe and Cable Transit









Overview

Oil & Gas compatible

MPACT is the fastest system to install for watertight divisions

 MPACT consists of a fibrous filler packing and watertight sealant

 MPACT is proposed as an alternate to rubber filler sleeves and silicone sealant







Advantages

- Sleeve length can be reduced by 25%
- Less Sealant than competitive systems (35% reduction)
- Shelf life advantages (18 months. vs. 6 months.)
- Lower VOC Content; More environmentally friendly
- Two-component system:
 - simplify installation and logistics!

















Dispense Sealant



Trowel Sealant

Installation Video:

https://vimeo.com/209765374





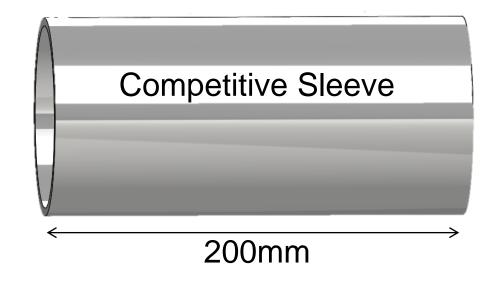


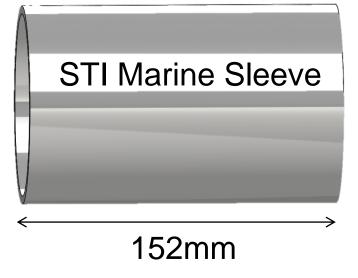
Reduce Sleeve Length

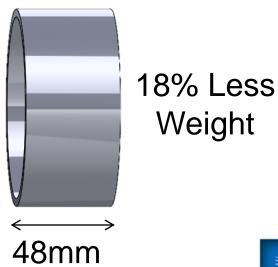
- MPACT requires 152 mm sleeve length
 - Competitive systems require 200 mm length
 - Reduce weight by >18%



Note: Supplied by yard.



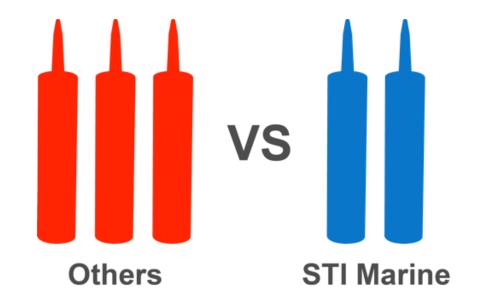






Reduced Sealant Thickness

- MPACT requires 13 mm depth
 - Competitive systems require 20 mm depth
 - Sealant reduced by 35%









Better Shelf Life



MPACT has 18 month shelf life

- Competitive silicone products have 6 month shelf life
- Silicone sealants still dispense, but will not cure
 - Impossible to know if the product has gone bad
- MPACT will eliminate these problems!





Low VOC Content



MPACT is more environmentally friendly

- MPACT MFS Sealant is VOC is 11 g/L
- Silicone sealants ≈ 3x more VOC content
- MPACT MFS Sealant less odor than silicone sealants



Fewer Components

- MPACT has fewer components
 - Component #1: MFS Sealant; 281 ML cartridges
 - Component #2: MPACT Filler Blanket; 9.1 m x 127 mm

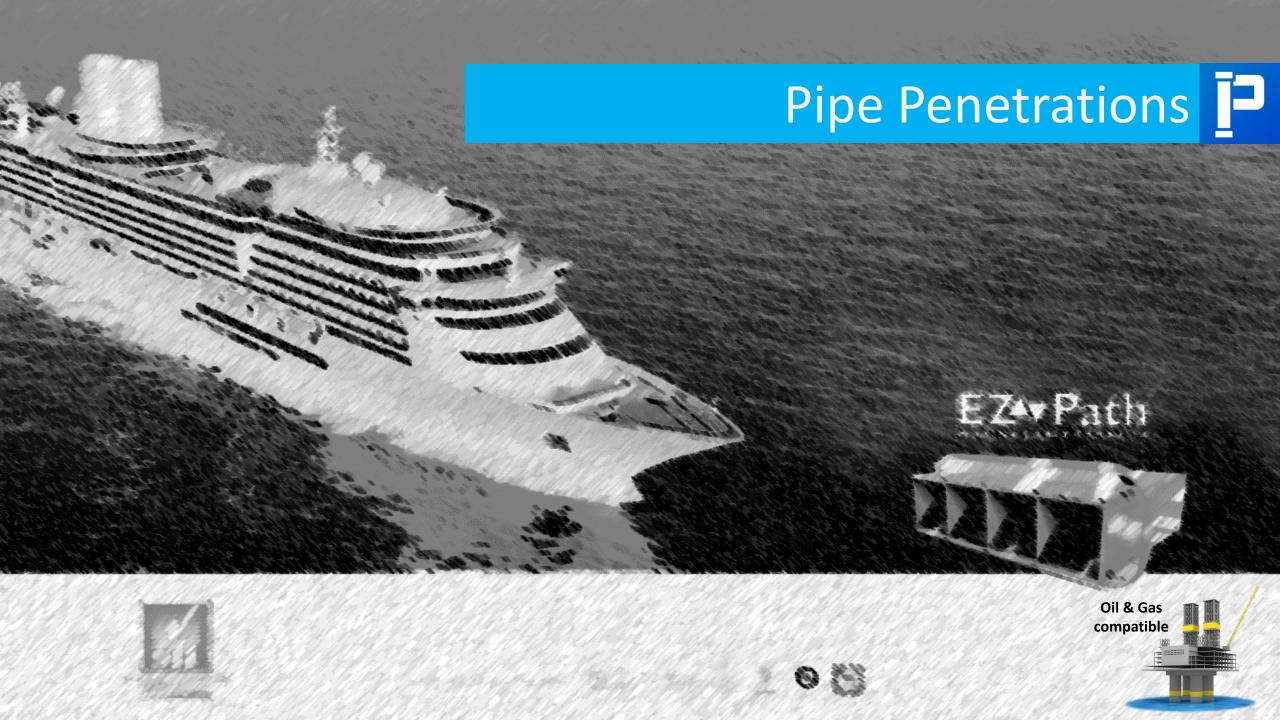
wide x 25 mm thick rolls



OR





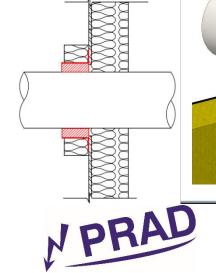


Bulkhead

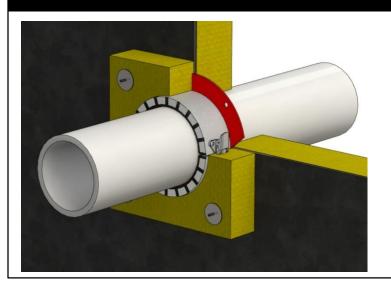








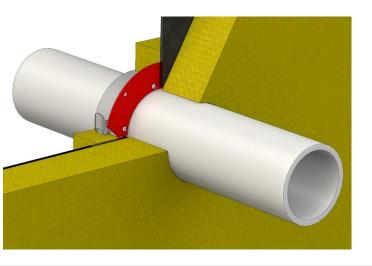
Exposed side

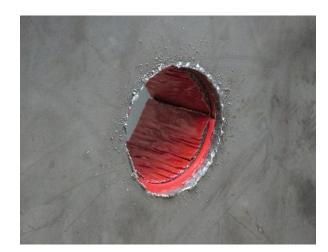




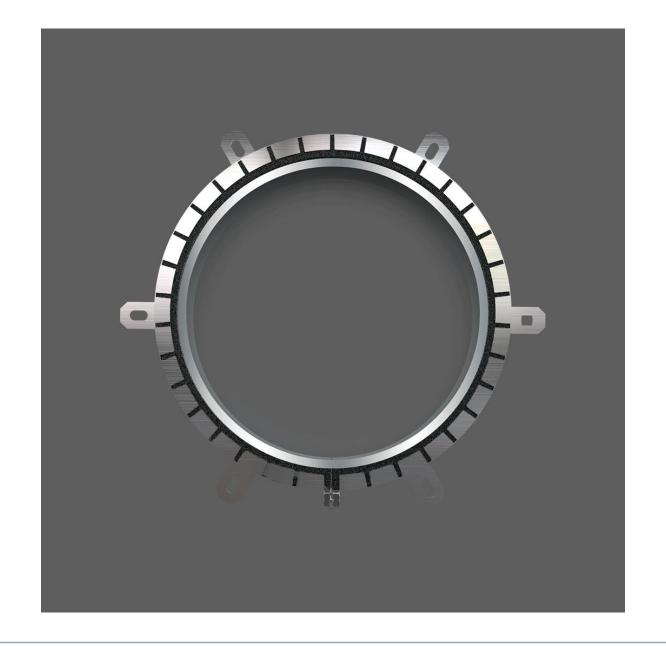


Unexposed side









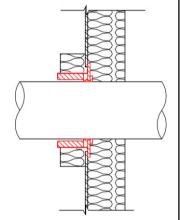


Bulkhead









Exposed side

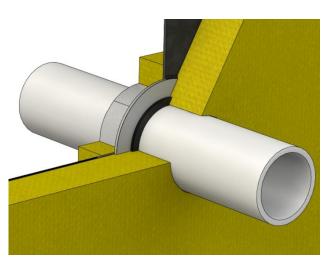






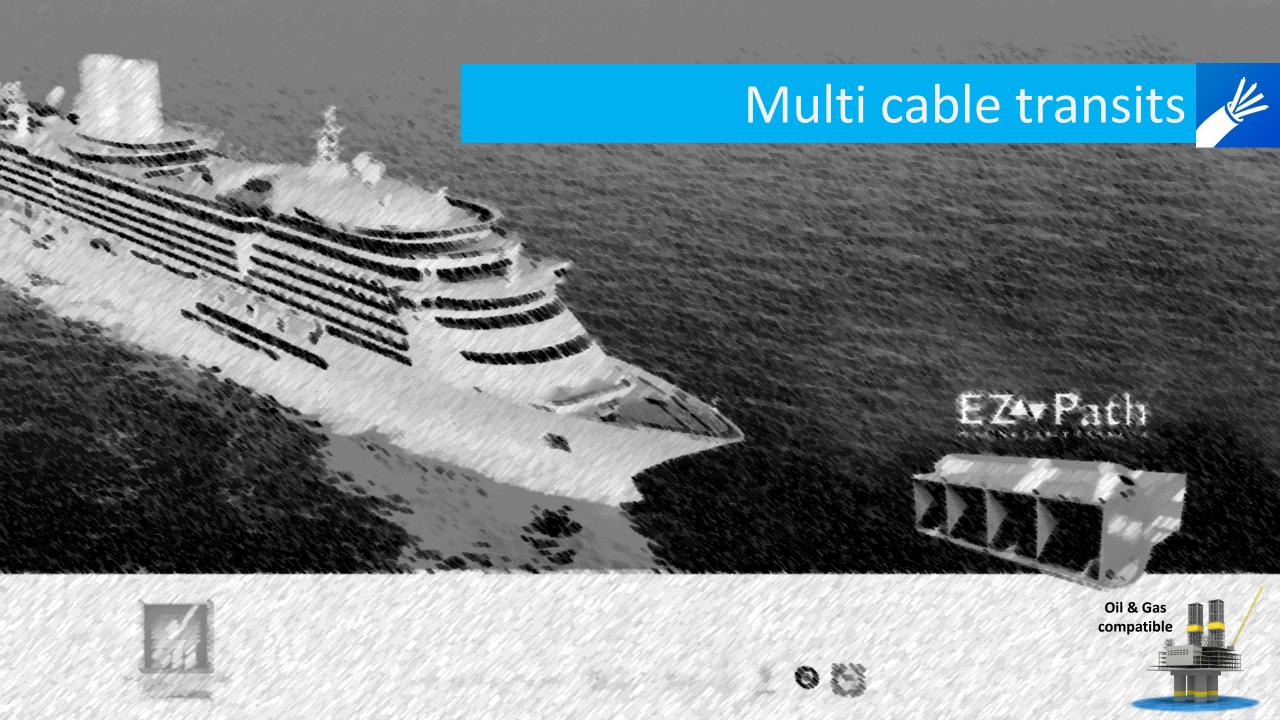
Water-Tight

Unexposed side









Cable Transits - A Brief History

- The Multi Cable Transit device was invented post WWII in the early 1950s
- Original design incorporated steel frames with modular blocks
- Over the course of 60 years, the design has seen refinements, many for the better



Multi Cable Transit (MCT) Failures

 All cases are from various types of vessels, including passenger ships, oil rigs, and drill ships

 Generally relate to ongoing maintenance over time



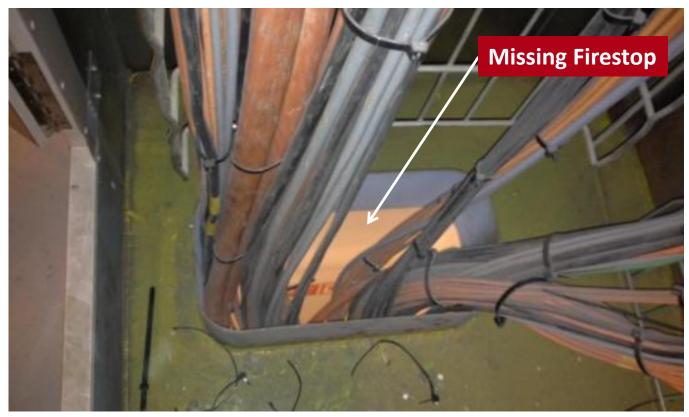


MCT Failures: Missing Blocks or misplaced wedges





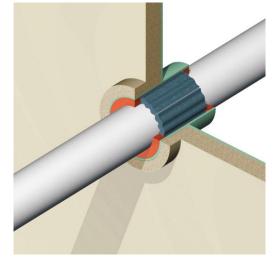
Sealing Materials Removed Completely

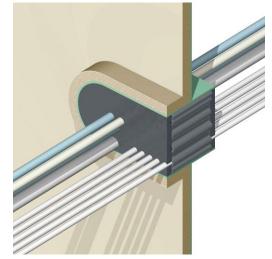




Current Transit Installation Method

- 1. Cut a Hole in the Division
- 2. Fabricate and Weld Sleeve
- 3. Pull Cables
- 4. Insert Filler Sleeves Around Each Cable
- 5. Insert Filler Sleeves in Open Spaces
- 6. Apply Sealant
- 7. Apply Sealant On Other Side of Division





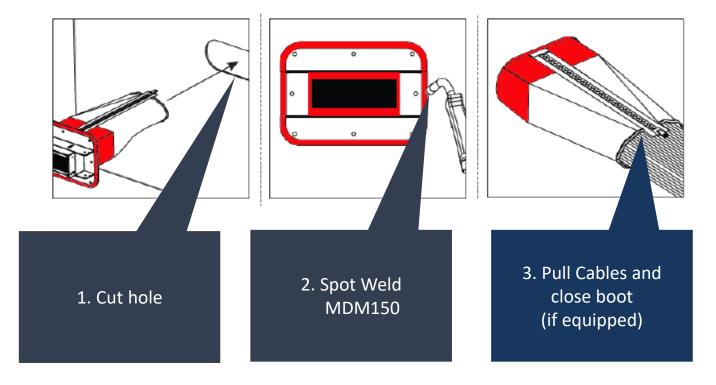




Oil & Gas compatible

Installing EZ-Path® Is As Easy As 1-2-3!

- 1. Cut a Hole in the Division
- 2. Spot Weld Device
- 3. Pull Cables



No Surveyor for additional cable pulls required. EZ-Path® always keeps it's fire integrity





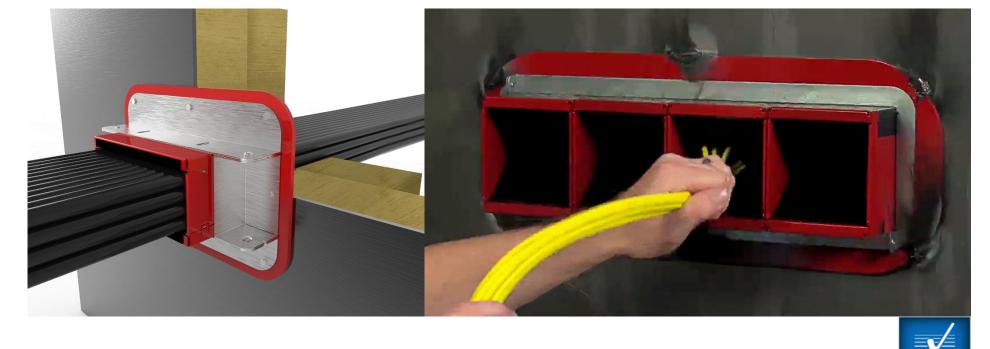


Easy and Quick Success

Both Ship-Yards and STI strive to provide the most innovative, cost effective products and solutions on the market. We are both committed to continuous improvement and efficiency in production while promoting life safety and ensuring premium quality.

VIDEO





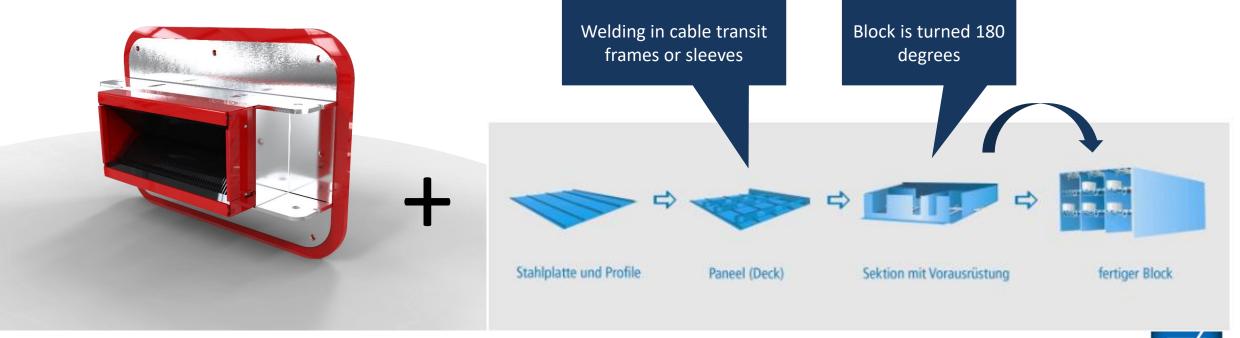




EZ-Path in the production workflow

Transits are Installed During Block Construction

Once Blocks are Joined, Just Pull Cable and You are Done!







Save Time & Money with EZ-Path®





How Complicated is Your Transit Install?



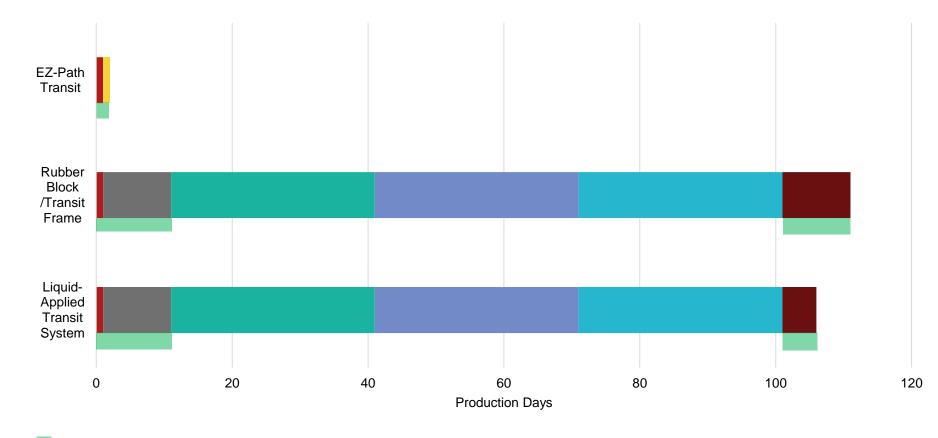
Sleeve or Frame install

> Pull Cable Scheduling

Pull Cables

Finishing Install Scheduling

Finish Block/ Liquid Install





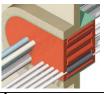




Side by Side Time and Labor Comparison of Install Methods

STI EZ-Path vs. Rubber Block & **Liquid Applied Transit Systems**





Step	Procedure	MDM150Y	Time	Rubber	Time	Liquid	Time
			Minutes	Block	Minutes	Applied	Minutes
1	Cut a hole in the division	√	10	\checkmark	10	√	10
2	Buy/Manufacture Sleeve	NO	0	\checkmark	60	\checkmark	60
3	Bring heavy steel sleeve on board	NO	0	\checkmark	30	\checkmark	30
4	Weld sleeve to division.	NO	0	\checkmark	60	\checkmark	60
5	Carry Light weight EZ-Path on board	\checkmark	15	NO	0	NO	0
6	Weld EZ-Path to division	\checkmark	20	NO	0	NO	0
7	Paint over welds	\checkmark	10	\checkmark	10	\checkmark	10
8	Marking and painting both sides of sleeve	NO	0	\checkmark	30	\checkmark	30
9	Pull cables	√	Same	\checkmark	Same	\checkmark	Same
10	Close EZ-Path Zipper	√	1	NO	0	NO	0
11	Adapt blocks opening to correct diameter	NO	0	\checkmark	15	NO	0
12	Lubricate and insert blocks and divider pla	NO	0	\checkmark	60	NO	0
13	Lubricate and insert wedge	NO	0	\checkmark	15	NO	0
14	Tighten wedge with Torque Wrench	NO	0	\checkmark	10	NO	0
15	Insert filler sleeves around each cable	NO	0	NO	0	\checkmark	30
16	Insert filler sleeves in space between cabl	NO	0	NO	0	\checkmark	30
17	Apply sealant to one side	NO	0	NO	0	\checkmark	15
18	Move to opposite side and apply sealant	NO	0	NO	0	\checkmark	20
19	Finish insulation	√	30	\checkmark	30	√	30
	Total time in minutes		86		330		325
	Total Time in hours		1.4		5.5		5.4
	Saved time by using EZ-Path				4.1		4.0
	Hourly rate for skilled labour		€ 65,00				
	Saved total labour cost				€ 264,33		€ 258,92

STI MARINE FIRESTOP

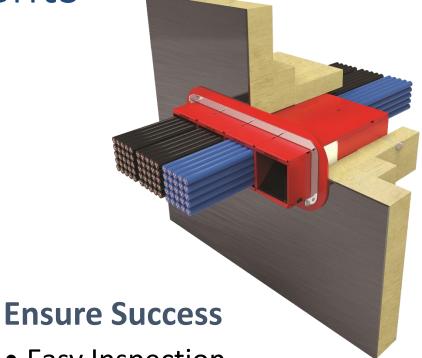
*Note: Comparison assumes MDM150Y Marine EZ-Path Fire Rated **Pathway**





Realize the Benefits

- No Complicated Sealing After Cable Runs
- Drastically Reduced Total Install Time
- No Design or Plan of Individual Cable Placement
- Less Welding
- Less Production Staging Issues
- Additional Capacity Built In
- Maintenance Free
- 100% Compliant, 100% of the Time



- Easy Inspection
- Long Term Compliance
- Ongoing Owner Satisfaction





STI is also very responsive

- Meyer Werft has a problem with busbars and the present solution cracks and is time consuming to install
- They asked STI in mid-2016 to develop a solution
- We did, and had it tested by September 2016
- Installation is planned once the Type Approvals are in from DNV-GL







STI is also very responsive

- CCL wanted to replace copper exhaust pipes with GRE ones.
- We developed and fire-tested a 700mm GRE pipe within a few months.
- They were impressed with the speed and quality of STI's response







This is to certify that

The product detailed below will be accepted for compliance with the applicable Lloyd's Register Rules and Regulations and with the International Convention for the Safety of Life at Sea, (SOLAS), 1974, as amended, for use on ships and offshore installations classed with Lloyd's Register, and for use on ships and offshore installations when authorised by contracting governments to issue the relevant certificates, licences, permits etc.

STI Marine, a division of Specified Technologies, Inc.

Address 210 Evans Way,

Somerville, NJ 08876

United States of America

PIPE PENETRATION (STANDARD FIRE TEST) Type

Description Fire Resisting GRE Pipe Penetration Seals - Type: "MFC" - STI

Marine Firestop Collars for GRE pipe penetrations in A-60 Bulkheads

Specified Standard IMO Res.MSC.307(88) - 2010 Fire Test Procedures Code, Annex 1,

The attached Design Appraisal Document forms part of this certificate.

This certificate remains valid unless cancelled or revoked, provided the conditions in the attached Design Appraisal Document are complied with and the equipment remains satisfactory in service.

Date of issue 12 May 2015 11 May 2020

SAS F15-1 NEW DRAFT 2 Certificate No.

Sheet No M. Farrier

Surveyor to Lloyd's Register EMEA A Member of the Lloyd's Register Group

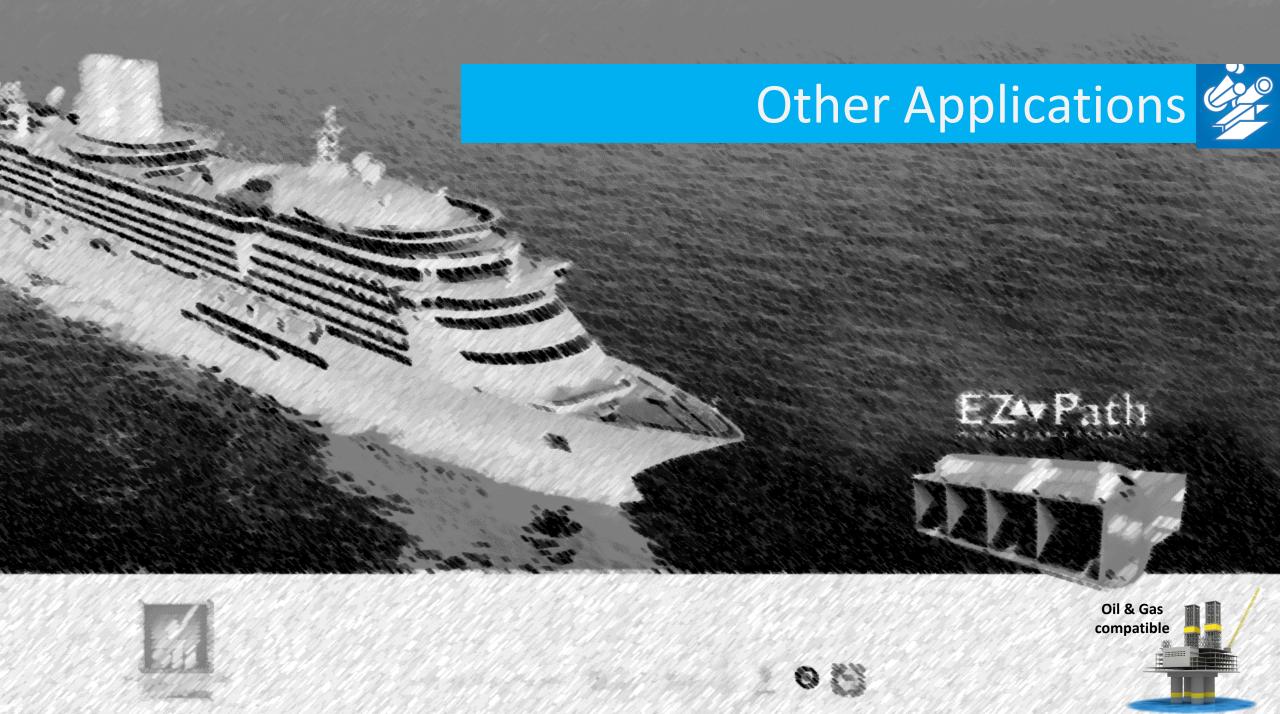
This certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested. The manufacturer should notify Lloyd's Register of any modification or changes to the equipment in order to obtain a valid Certificate.

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EXAMPLE ?





Non-hardening Firestop Putty (MPU)

- STI Marine Firestop Putty
 - Non-hardening, moldable compound
 - Ideally suited for small to medium size openings in fire-rated divisions
 - 100% solids, butyl rubber formulation won't shrink or dry out
 - Allows for vibration







MPU52: Coils of Putty in a Convenient Pail!









MSS

> Snap-Seal Cable Plugs

This two-piece device snaps together for easy installation and is ideally suited for single cable penetrations through joiner panels and other types of divisions.

MSS was specifically designed for use with surveillance cameras and provides a split design that can be used with new or previously installed cables.











Marine Cable Spray (MCC105)

- Water-based, intumescent cable spray for protecting cables
- Designed to reduce flame travel along grouped cables
- Meets FM, IEC60331, and IEC60332 standards













In house fire lab.









Before a fire test

After a fire test





Deck test on Horizontal Furnace









STI CERTIFIED PRODUCTS



THIRD PARTY APPROVALS















STI Marine Firestop Products are approved by major classification societies, including American Bureau of Shipping (ABS), US Coast Guard (USCG), Bureau Veritas (BV), and MED B & D certification. Additional approvals by Lloyds Register (LR) and Det Norske Veritas (DNV) are pending. Other approvals may be applied for on an as-needed basis. Contact STI for additional information on approvals.







Reference List

Big Foot LQ Chevron





Ocean Guardian **Diamond Offshore** Refit



French Navy Ships Newbuild projects



MARINE FIRESTOP SYSTEMS

FOR LIFE SAFETY & PROPERTY PROTECTION





REFERENCE LIST

YEAR 2015 & 2016

type	Owner	Project type	project name	Yard	Installer/Vendor	delivery	build countr
Ambulance vessel				Swiftships	Yard	2015	USA
Bulk Carrier		Refit		Sturgeon Bay	Hiller Systems	2015	USA
Container Ship	Horizon	Refit	Horizon Kodiak	Shanghai	Yard	2015	USA
CRUISE	American Cruise Line	Newbuild	•	Chesapeake	Chesapeake	2016	USA
CRUISE	Carnival	Refit	Legend	drydock	· ·	2015	
CRUISE	Carnival	Refit	Freedom	drydock		2015	1
CRUISE	Celebrity Cruises	Refit	Celebrity Expedition	,	Nordic Made	2016	USA
CRUISE	Holland America Line	Refit	Oosterdam		Century	2015	USA
CRUISE	Princess Cruises	Refit	Coral Princess		Century	2016	USA
CRUISE	Princess Cruises	Refit	Diamond Princess	drydock	Century	2016	USA
CRUISE	Princess Cruises	Refit	Coral Princess			2015	
CRUISE	RCCL RCCL	Refit		drydock			
			Navigator	drydock		2015	
CRUISE	RCCL	Refit	Oasis of the Seas	drydock		2016	
Dredge	Great Lakes Dredging	Newbuild	Hull 257	ESG	ESG	2016	USA
Drill Ship	Diamond Offshore	Refit	Ocean Pioneer	Kiewit		2015	
Drill Ship	Diamond Offshore	Refit	Ocean Confidence			2015	
FERRY	Tallink Ferries	Newbuild	Tallink Megastar	Meyer Turku	Halton Indoor Vacuum	2017	Finland
Flotel	Hornbeck	Refit	HOS Riverbend			2015	
Flotel	Hornbeck	Refit	HOS Achiever			2015	
Liftboat	Montco	Newbuild					
Offshore	Hess	Newbuild	Stampede	Kiewit	Jamestown	2016	USA
Offshore	Shell	Newbuild	Appomattox	Kiewit	Performance Contractors	2016	USA
Offshore LQ	British Gas	Refit	Poinsettia and Hibiscus		H. Rocker Electric	2015	USA
Offshore LQ	Chevron	Refit	Big Foot		H. Rocker Electric	2015	USA
Offshore LQ	HHI	Refit	HHI Sonam			2016	USA
Offshore LQ	Loadmaster	Newbuild	•	Lonestar	Lonestar	2015	USA
OSV	Oceaneering	Newbuild		RAF	Meitec	2016	USA
OSV	Oceanicering	Newbuild	Hulls 671, 672, 673	Bollinger	Yard	2015	USA
PSV	Beemore	Newbuild	Hulls 6037	- Commiger	Coastwise Electric	2015	USA
PSV	GulfMark	Newbuild	Hulls 111, 112, 113	BAE	Meitec	2016	USA
PSV	Harvey Gulf	Newbuild	Harvey Rain	Trinity	Meitec	2016	USA
PSV	Hornbeck	Newbuild	HOS Bayou			2015	
PSV	ThomaSea	Newbuild	Hulls 147-226, 148-131, 148-279	ThomaSea	ThomaSea	2016	USA
PSV		Newbuild	Hulls 661, 662, 591, 592	Bollinger	Yard	2015	USA
PSV Pushboat	Evmard	Newbuild Newbuild	Ted Kaysar	Gukf Island Harvey		2016 2015	USA
Pushboat	Eymard	Newbuild	Hulls 112, 113, 114, 115, 118, 119	Harvey		2015	USA
Research	Univ of Hawaii	Refit	Kaimikau O Kanaloa	dockside	ships force	2016	USA
River Tug	Offiv of Hawaii	Newbuild	*	Dakota Creek	Dakota Creek	2016	USA
River Tug		Newbuild		Nichols	Nichols	2016	USA
River Tug		Refit	•	Bay Ship	Bay Ship	2016	USA
Semi-submersible	Diamond Offshore	Refit	Ocean Guardian	1		2015	1
Semi-submersible	Diamond Offshore	Refit	Ocean Valiant			2015	
Super Yacht	Voyager	Refit	S/Y Voyager	Dania Cut	RKO Electric	2016	USA
Super Yacht	Voyager	Refit	S/Y Voyager	Dania Cut	Talon Mechanical	2016	USA
T-AKR T-AO	USN	Refit Refit	USNS Shughart Guadalupe	dockside	ships force	2016 2016	Denmark USA





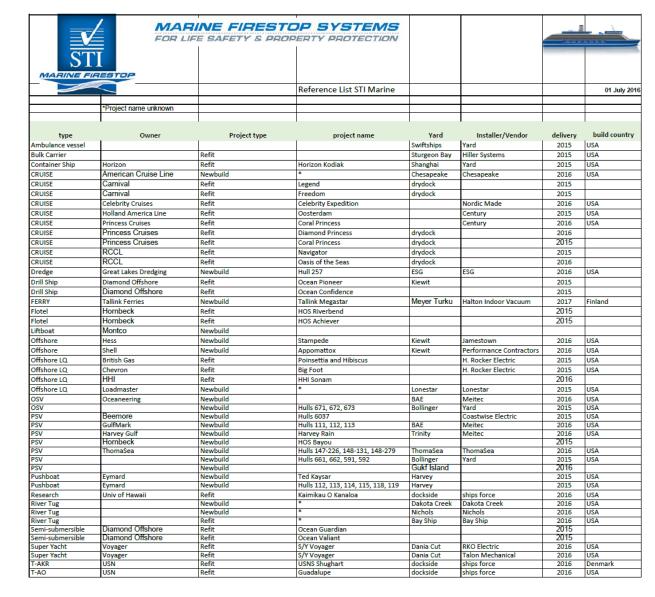
Coral Princess Refit



HAL Oosterdam Refit



French Navy Ships Newbuild projects







STI Marine Europe

CONTACT DETAILS:

Ruben Wansink

Marine Regional Manager - Europe

STI MARINE Firestop Europe

The Netherlands

Mobile: <u>+31620408882</u>

Email: Rwansink@stimarine.com

https://vimeo.com/stimarine

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