

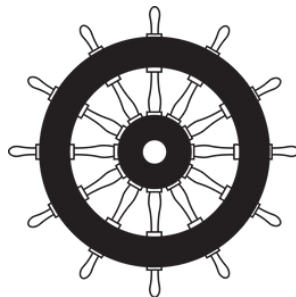
Hell Sea

The first hull penetration for exhaust pipe
fire proof and watertight in the world

Hell



Sea



It's all about safety

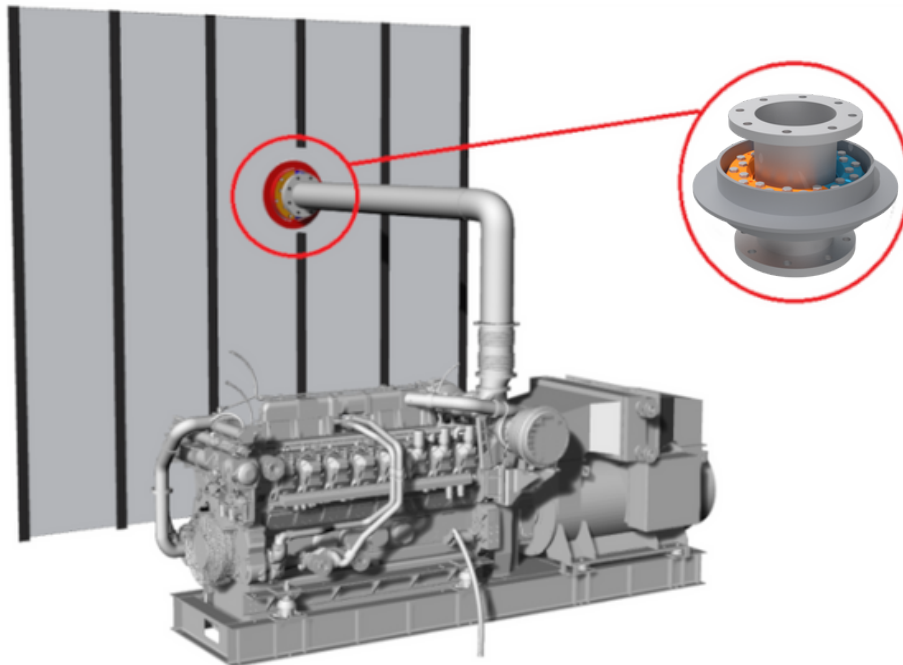
Hell Sea is the first bulkhead and deck exhaust fitting watertight-fireproof passage with the lowest thickness in the world.

Hell Sea project has been designed in order to respond to new safety regulation imposed by the various naval registers.

Developed by our team of experienced engineers, it allows the passage of exhaust pipes at high temperatures through the various rooms of the boat without compromising comfort and design.

Composed of fireproof and waterproof materials, it guarantees high safety.

Hell Sea is extremely easy to assemble and in case of need is also possible to easily dismounting it for pipes maintenance.



Offering you the best solution for your vessel.

Hell Sea was born from the need to adapt to the new regulations imposed by the various naval registers regarding the passage of exhaust pipes.

After several engineering studies we arrived at this solution which consists of four separable and reconstitutable semiflanges filled with special packings.

This makes Hell Sea fireproof and watertight putting the various vessel rooms in complete safety. Hell Sea is the first solution in the world able to guarantee extreme safety with minimal thickness.

In 2013 while Hell Sea was developing a prototype for solving the problem related to the exhaust gas pipes passage, it has been faced, on an Italian shipyard, the consequence damages generated by a fire caused by the exposed exhaust pipes.

In order to solve this problem the first Hell Sea prototype has been finally designed and tested overcoming all classification societies requirements.

The original exhaust pipes have been consequently upgraded with the first certified Hell Sea fitting.

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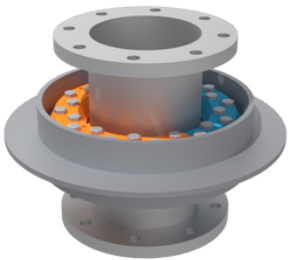
Standard Kit

The **Hell Sea** standard kit is composed of fireproof and watertight materials, it guarantees high safety.

It is made up of four metal half-flanges that compress a fireproof and watertight graphite packing.

It is also pre-assembled (certified ISO 9001) with a section flanged pipe so that it can be installed on the pre-existing pipe line.

For this reason the Hell Sea standard kit is extremely easy to assemble, indeed just one welding intervention is required and in case of need it can also be easily disassembled for any maintenance on the pipe line.



Features & Benefit

- Certified and patented 20m
- Watertight and A60 Fireproof
- Resistant to very high temperatures
- Prevents vibrations
- Prevents heat dispersion
- Pre-Assembled kit ready for installation



Applications:

- Available in different sizes to fit common metallic pipes ranging from DN32 to DN1000
- Approved for use with common metallic pipe especially for exhaust gas pipe



Hell Sea standard installation

Hell Sea fittings must be welded to the fire-rated division for fast installation, either at sea or in dry dock.

They can be installed on a standard or eccentric penetration.

Easy installation:

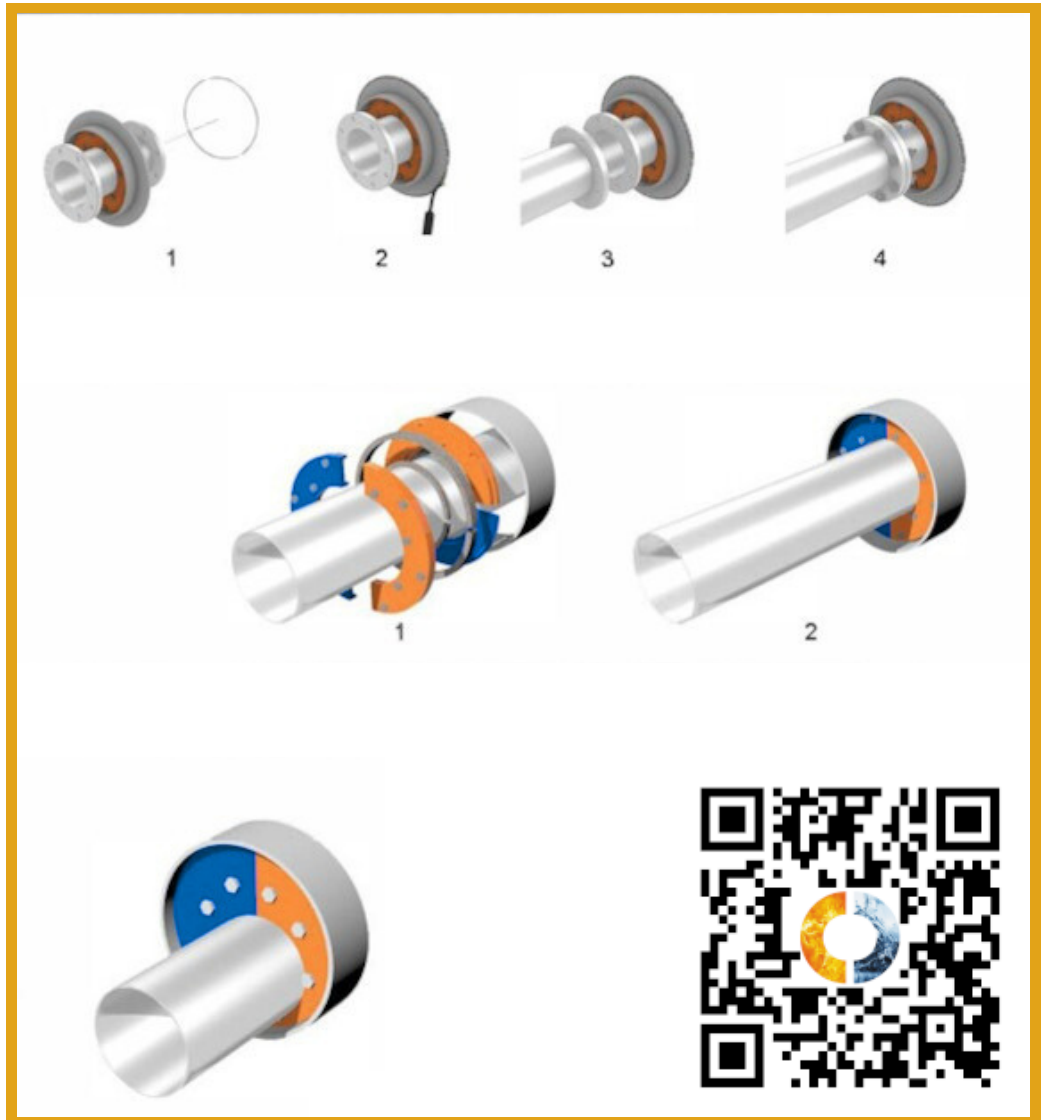
1. Make a hole according to the table
2. Weld the external flange to the structure
3. Move the pipe section and place it in the correct position
4. Connect the pipe line to Hell Sea flanges

Retrofits installation:

1. Positioning of the flanges on the pipe line
2. Screw all the bolts to compress the packing

Hell Sea
INNOVATIVE SAFETY SYSTEM

Also available for
eccentric pipe line



Hell Sea V.2

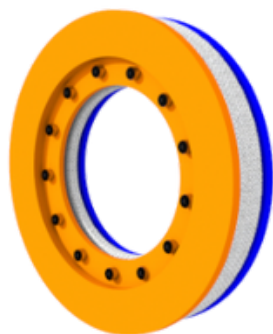
The **Hell Sea** V.2 kit is composed of fireproof and watertight materials, it guarantees high safety.

It is made up of two metal flanges that compress a fireproof and watertight packing.

It is also pre-assembled (certified ISO 9001) with a section flanged pipe so that it can be installed on the pre-existing pipe line.

The Hell Sea V.2 kit is extremely easy to install, you will need only to screw it.

Indeed no welding interventions are required and in case of need it can also be easily disassembled for any maintenance on the pipe line.



Features & Benefit

- Certified and patented 20m Watertight and A60 Fireproof
- Resistant to very high temperatures
- Prevents vibrations
- Prevents heat dispersion
- Pre-Assembled kit ready for an easy installation



Applications:

- Available in different sizes to fit common metallic pipes ranging from DN32 to DN1000
- Approved for use with common metallic pipe especially for exhaust gas pipe



Hell Sea V.2 installation

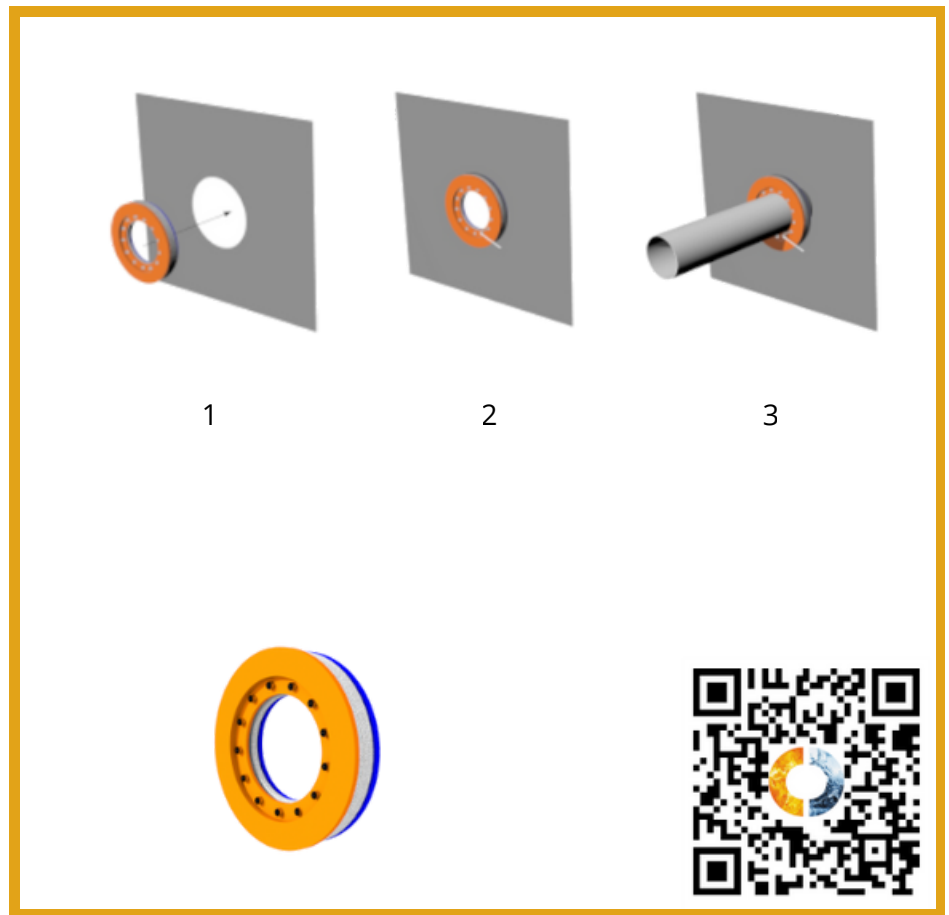
Hell Sea fitting must be screwd to the fire-rated division for fast installation, either at sea or in dry dock.

It can be installed on a standard or eccentric penetration

Easy installation:

1. Make a hole according to the table
2. Screw the external flange in order to press the packing and make it adhere to the bulkhead/deck
3. Move the pipe section and place it in the correct position

Discover more
on our website
www.hellsea.it



Hell Sea

Different configuration:



Hell Sea Slim Kit

The Hell Sea Slim Kit is the smallest solution of the Hell Sea product line, it can be installed on bulkhead or deck with a really "narrow space of actions," the dimensional range goes from DN32 to DN1000, Connection available:

V-Band / V-Band or PN6 Flange / V- Band.



Hell Sea Slim Curve Kit

The Hell Sea Slim Kit is the slim solution with a pipe section customizable as appropriate. with a dimensional range from DN32 to DN1000, Connection available:

V-Band / V-Band or PN6 Flange / V-Band.



Hell Sea Curve Kit

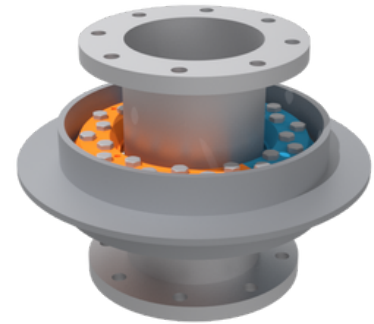
The Hell Sea Curve Kit is the standard solution with a pipe section customizable as appropriate It's available for a dimensional range from DN32 to DN1000,

Its also available for PN6 Flange connection.

Hell Sea

Hell Sea Standard Kit

The Hell Sea Standard Kit it's the smartest solution for the pipe line with a pre existing PN6 flange connection, it's dimensional range goes from DN32 to DN1000 with the lowest thickness ever made.



Hell Sea Binocular Kit

The Hell Sea Binocular Kit is the best solution for two pipelines close enough to each other. This kit usually comes in the slim version. Its dimensional range goes from DN32 to DN350,



Hell Sea Emergency Generator Hatch

The Hell Sea Emergency Generator Hatch is a combination of a Hell Sea penetration system and the "Hatch Box," with a built-in electromagnetic system that allow automatic opening in case of need, Its dimensional range goes from DN32 to DN250.

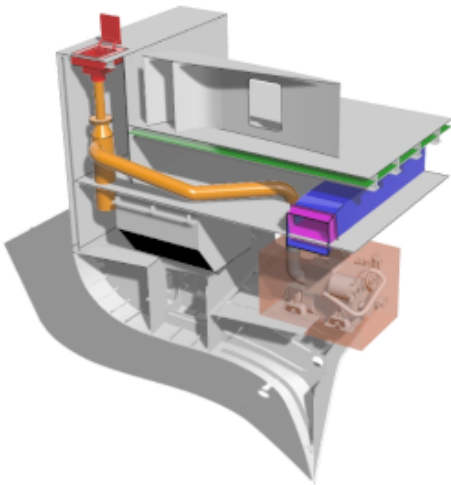


Hell Sea Emergency Generator Hatch

The **Hell Sea** emergency generator hatch is a safety system designed for exhaust gas pipes line that came out on the main deck.

It can automatically opening the door using a complete certifice IP66 electrical system.

It's available for a pipe diameter range from DN32 to DN250

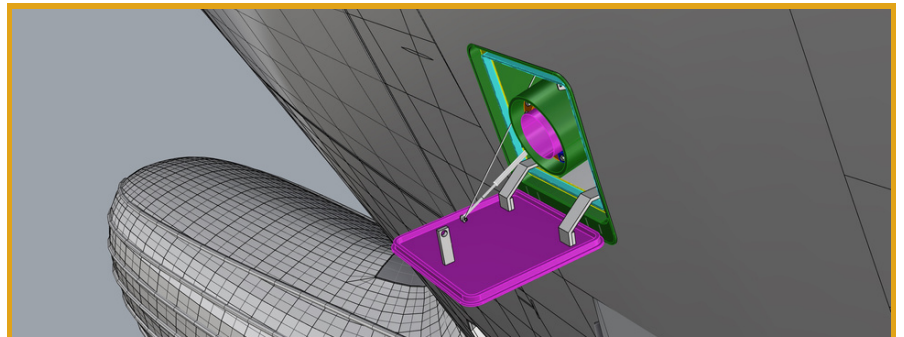


Features & Benefit:

- High safety without compromise the deck design
- Resistance to very high temperatures
- Prevents vibration
- Prevents Heat dispersion
- Pre-Assembled kit ready for installation

Applications:

- Available in different sizes to fit common metallic pipes ranging from DN32 to DN250
- Approved for use with common metallic pipe
- installable on Steel and aluminium hull

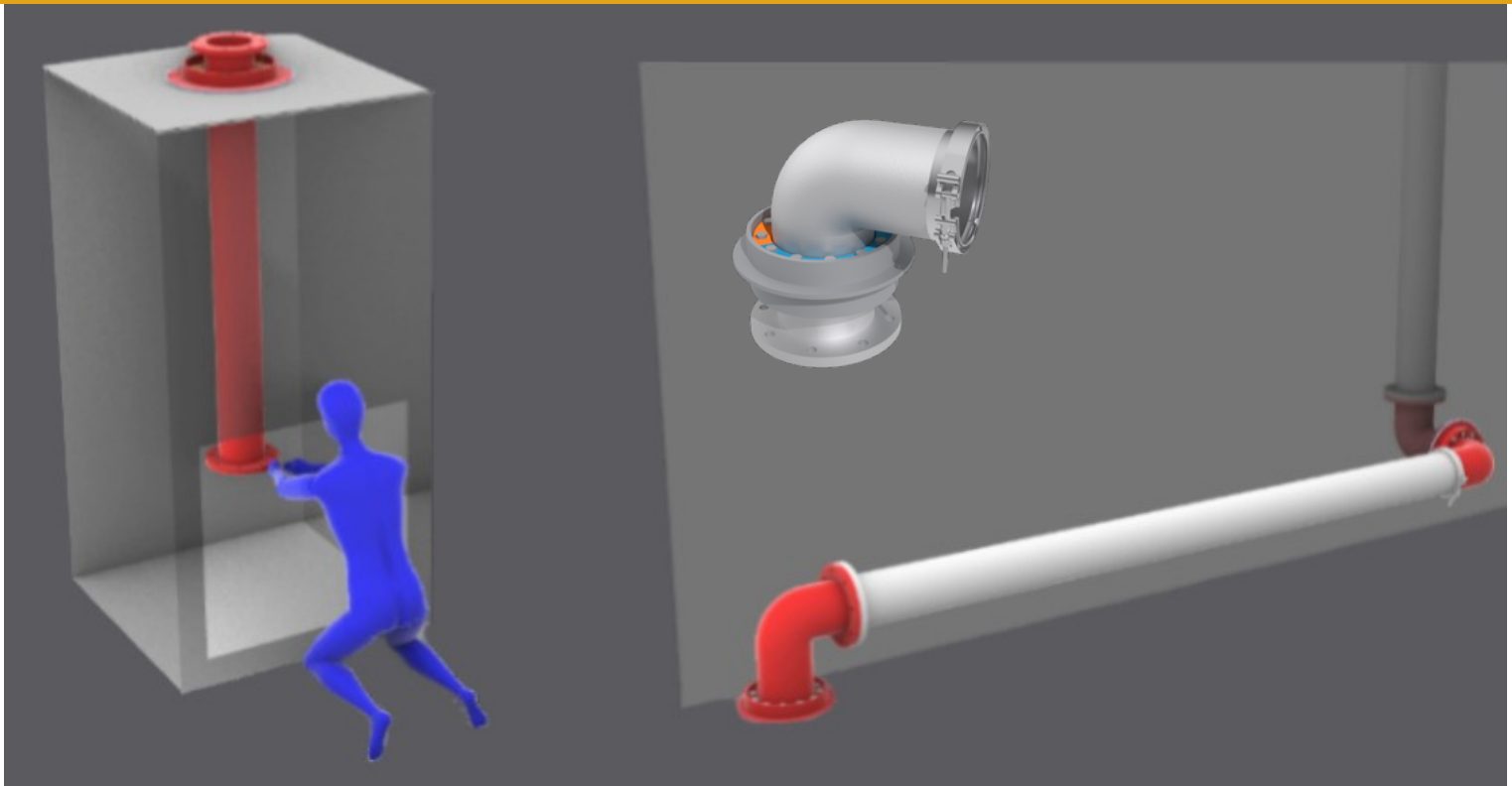


Field of application

There are different field of application for the **Hell Sea** system. It can be installed in narrowed space without any installation issue.

Indeed its main feature is the ease of installation and also its customizable feature.

As you can see on the photo it can be customized even for main trunk installation, varying pipe section lenght.



Exemple of Hell Sea customized pipe section lenght

Exemple of Hell Sea Slim Curve kit application in a really narrow space section lenght

Tested to 2010 IMO FTP, Annex 1, Part 3 Class A-0 to A-60 (Bulkhead / Deck)

Hell Sea has been tested and has successfully passed fireproof tests, obtaining the European MED A60 certificate in accordance with the fireprotection requirements imposed by the MED 2014/90 / EU marine equipment directives and according to FTP directives (IMO Res. MSC307 (88)-(2010 FTP CODE)-IMO MSC.1 /Circ. 1488) and the SOLAS standards, including the requirements of regulation (EU) 2018/773. The watertight capacities of Hell Sea were also tested, flooding and pressurizing the entire water room at 2 bar.

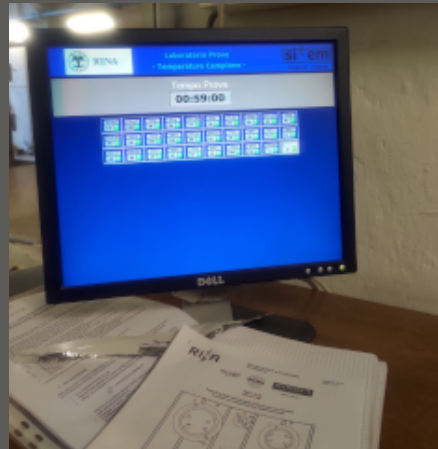
The product has proved to be a pond up to 20 meteers of immersion.



European MED A60 Test
Internal oven average
temperature: 1000°C

Test Duration: 60 minutes

Unit tested size: Pipes from
DN32 to DN1000



European MED A60 Test Average
temperature recorded from the
thermocouples assembled
on the exhaust fittings: 70°C

Test duration: 60 Minutes Final
result of the performed test:
Hell Sea units approved



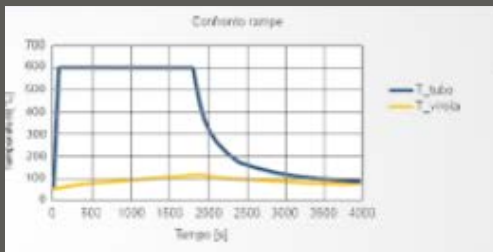
Temperature distribution on the Hell Sea unit size DN150 during a simulation



Tests were addressed on three different components, “exhaust pipe - compressing seal flange - shell ring”. The temperature was gradually increased in steps of 100°C kept constant for 10 min, up to 400 - 500 and 600°C. The cooling condition was monitored as shown. Tests were performed by AMIND ITALIA sas and Genesi srl, who are qualified for carry out test and issue the report wich is here summarized.



The data have been recorded on the instrument Eurotherm Nanodac at four channel. The Nanodac recorder/controller offers the ultimate in graphical recording combined with PID control for a box of its size

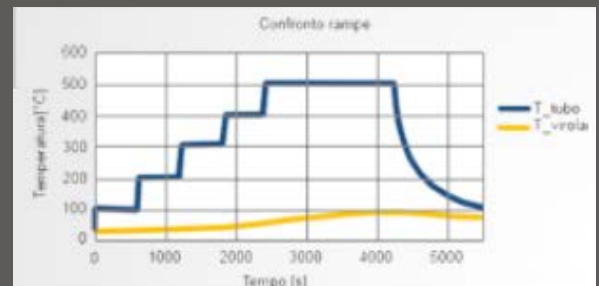


The simulated operating condition was risen from cold up to 500°C kept constant for 30 min. an additional sensor was addeed on the external part of the “shell ring”.

The simulated operating conditions was risen directly from cold up to 600°C and kept costant for 30 min.

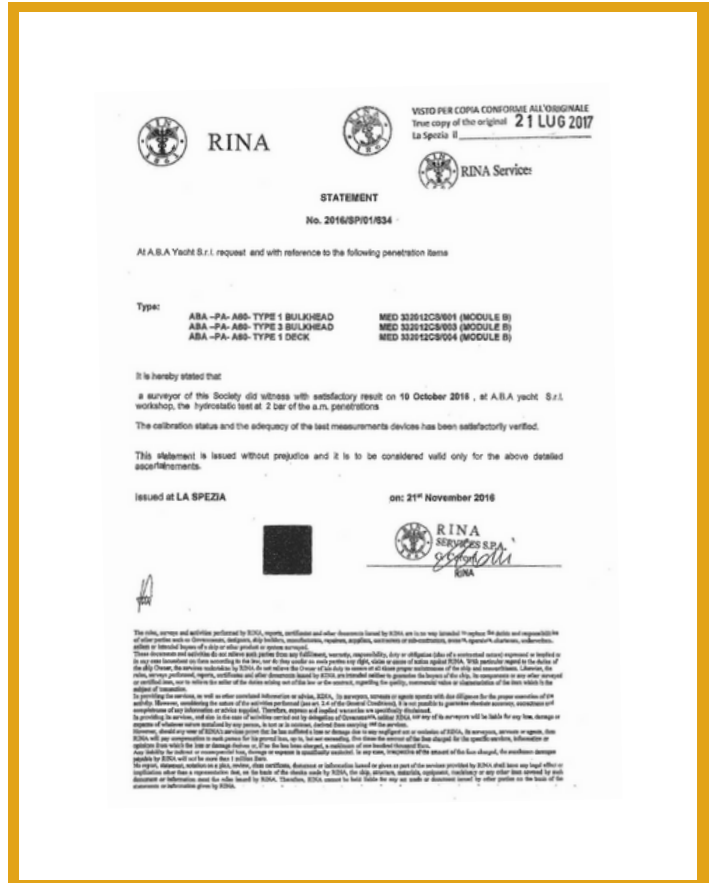
To be als underlined that the tests have been performed in a more severe conditions if compared to the real installation when the shel ring is welded to the vessel structure

Temperature test on hull pass



To obtain certification for our specific case, high-temperature pipe penetrations with watertight certification, together with RINA we performed a test using inert gas instead of water, verifying the resistance to gas passage at 2 bar pressure.

Declaration of conformity by RINA





The Service ABA engineering team immediately got to work to develop a tailor-made solution, (four DN900) choosing a standard retrofit kit that could be perfectly adapted to the existing pipelines at the construction site.

After successfully passing all quality control checks, the kits were shipped directly to the construction site in China, where we also personally handled the on-site installation.

We're proud of the final result and look forward to delivering more reliable, custom-fit technical solutions to meet the most complex client needs.

Hell Sea x SAIPEM



Dear Mr Balordi, I confirm that Mr Lombardi and his colleague have just left Saipem Yantai yard after having successfully installed the watertight and fireproof penetrations in our exhaust lines.

We have really appreciated the support provided by Mr Lombardi and his team and, as well, the type of product used that has really simplify our activities for this critical installation.

The short delivery and high reliability/flexibility of the supplied product is definitely an added value for this type of application.

Saipem Procurement representatives are in cc to this e-mail for taking into account the above positive feedback for future collaboration between our Companies.

Best regards,



Reference List

On hellsea.it you can read all about our world-leading solution for sewage safety.

You will also find a series of applications, for which Hell Sea was chosen by professionals for the exceptional quality and reliability of the performance achieved.

www.hellsea.it



HOME ABOUT US PRODUCTS **REFERENCE** CERTIFICATES MORE APPLICATIONS NEWS GALLERY CONTACT



HEESEN



CODECASA



OVERMARINE
GROUP



SAIPEM GROUP





Hell Sea x Ingegneria Italia



We had the pleasure of collaborating on social media with Ingegneria Italia.

Their team showed great interest in our product and its story.

Their technicians and video makers visited Service A.B.A. to record clips about the penetration system, which they later used on their social channels to promote the world's most compact safety system, designed and assembled in Italy.

All recordings can be found on the official HellSea Instagram and Facebook pages.

Technical Characteristics

Hell Sea penetration system stop smoke and fire up to **1000 degrees** Celsius.

Capeble of resisting **2 Bar** from water pressure.

It can also slightly reduce vibrations due to the soft packing used inside.

Warranty Care Tips

It's very important to follow with precision every step indicated for the installation, before the installation of the pipe line and **never** apply pressure or move any of the parts before and after the penetration system is welded.

Each penetration system is delivered already fully assembled and correctly tightened.

Which must remain unchanged to guarantee proper performance and safety.

After Sale - Garancy

Customers can directly contact **Service A.B.A.** to request the Hell Sea garancy, that include an intervention by one of our engineers

in case the Penetration system has any production defect.

It's essential that no alternative solution be undertaken in this case, as any tampering with the product will result in the loss of the warranty and certification.

Pricing - Installation

One of Hell Sea's greatest qualities is its ease of installation, which is handled directly by the customer, who receives a manual with all the necessary instructions.

Once installed, the system requires virtually no maintenance, as the product does not undergo changes over time.

This translates into significant long term savings, since the only expense is the initial purchase of the Hell Sea itself.



Boat Builder Awards 2019

Hell Sea was nominated as finalist at the prestigious 2019 Boat Builder Awards alongside Benetti, in the category: "Collaborative solution between a superyacht builder and his partner" The assembly of this system requires only a simple welding operation; it is delivered as certified ISO9001 pre-assembled kit and is standardized for all pipe size. "We have expanded our range of Hell Sea products also for other needs, always aimed at safety system for exhaust pipes, such as our latest patent relating to emergency hatches which, in the event of fire, open and allow the correct escape of exhaust gases, without letting the flames pass."

Hell Sea

INNOVATIVE SAFETY SYSTEM

The Hell Sea systems are designed to guarantee an high quality and reliability, desined, built and assembled entirely in Italy.

Customer service and technical support for all of your project specific.
Condictions are always avaiable through Service A.B.A. headquarter
or our Worldwide distribution network.

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