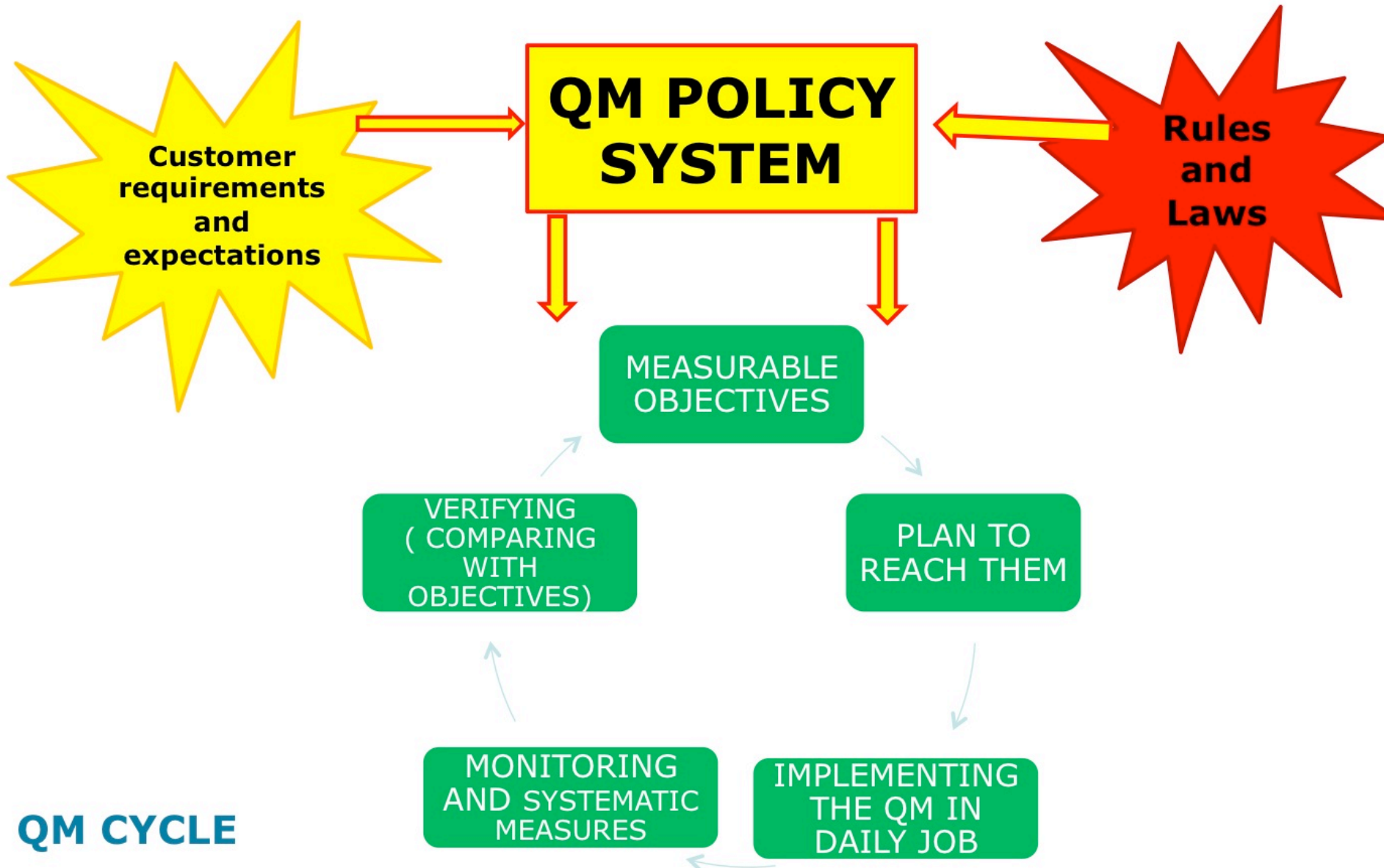


Novità sulle certificazioni dei materiali nautici e relative tematiche ambientali

Relatore: Enrico Ursomando

16 febbraio 2017 ore 16.00





QM CYCLE

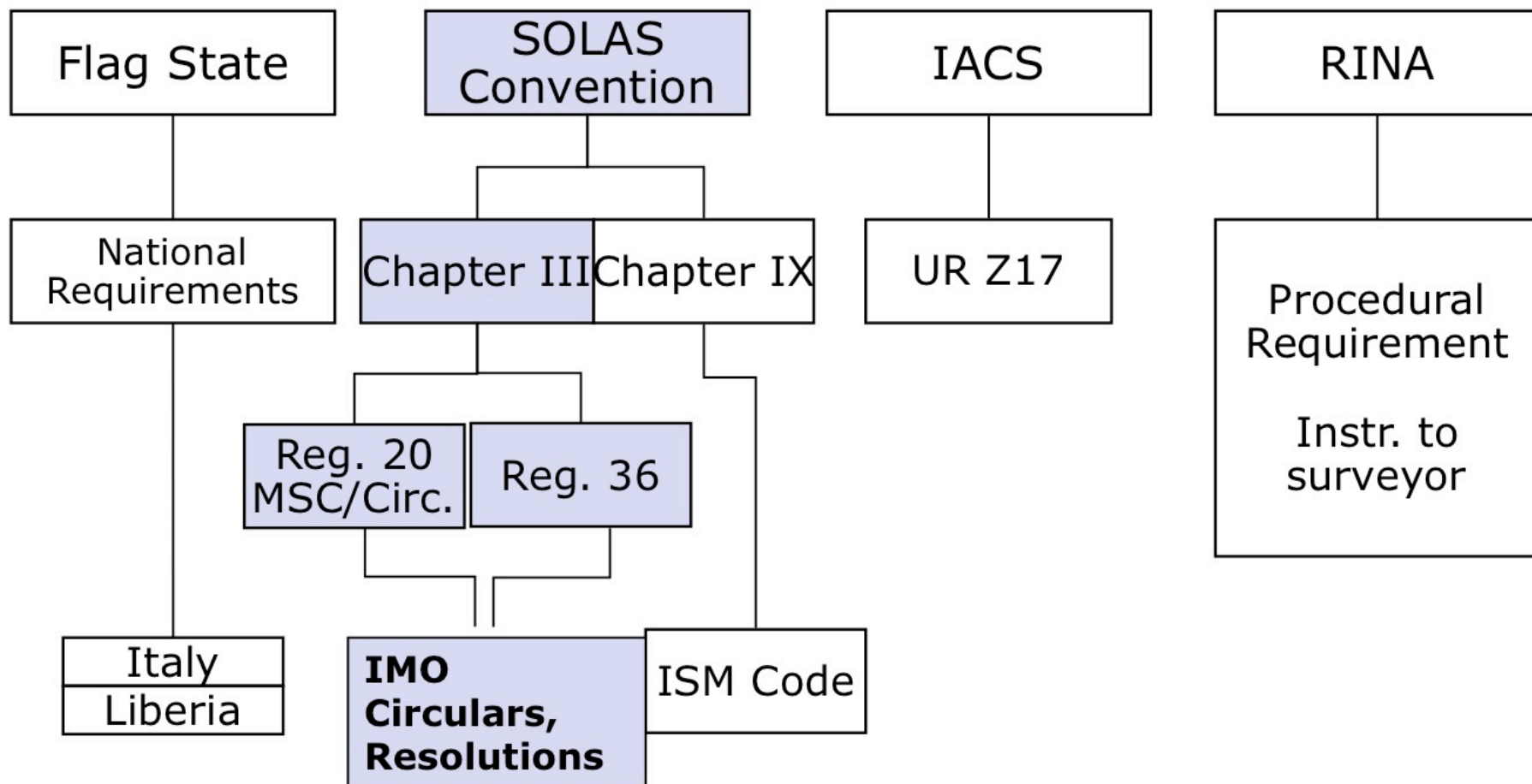
Maritime Rules

SMS to ensure

- Compliance with mandatory international and national rules and regulations
- Observance of applicable codes, guidelines, recommendations



Rules and Regulations



New Building



Test On Board

TEST

- TEST:**
- PRODUCTS
 - MACHINERY
 - FEATURES

**TYPE APPROVED
(TA + MED)
PRODUCTS IN SERIES**

**CLASS AND
STATUTORY
SHIP**

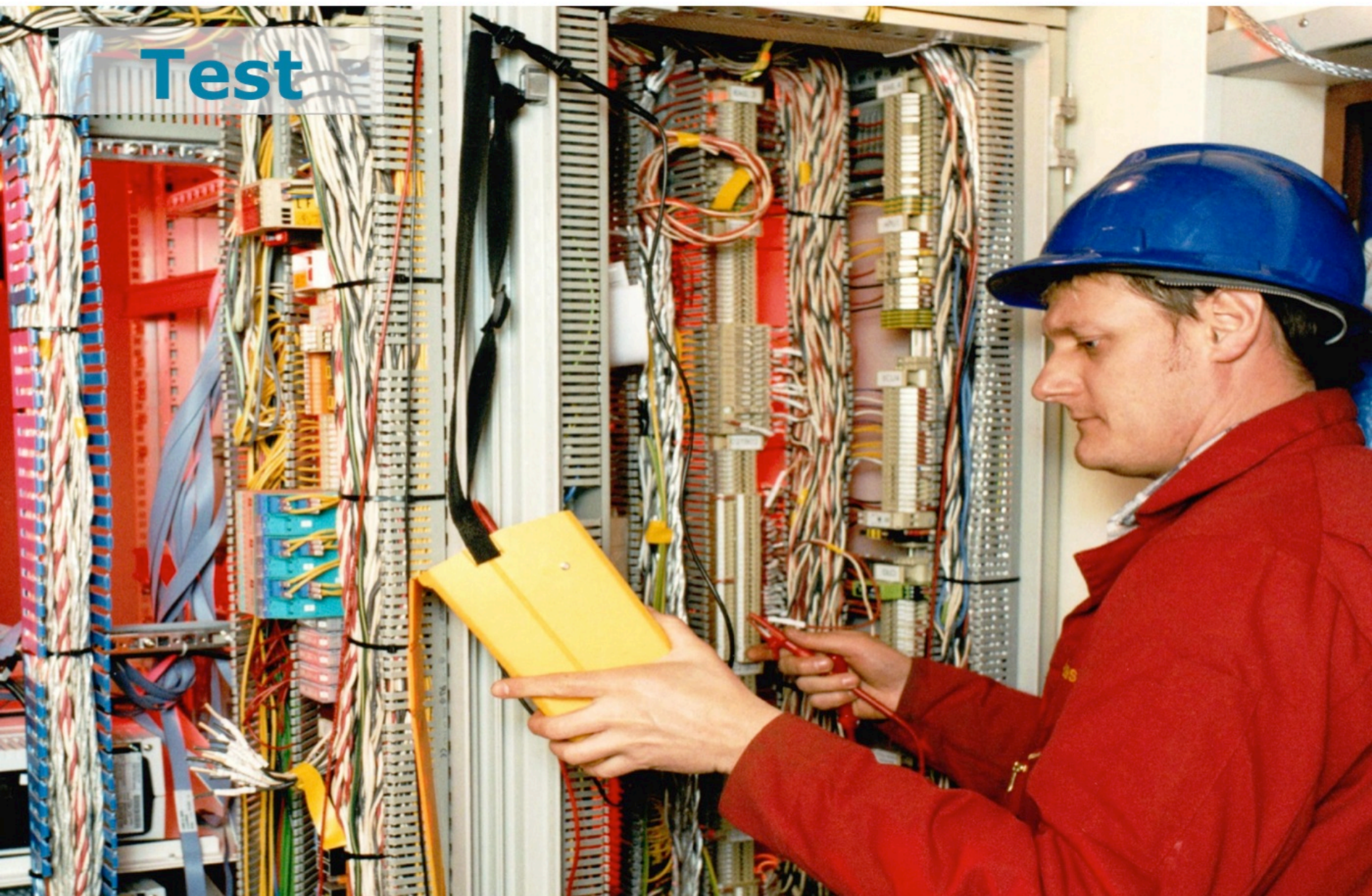
Factory Test

- Materials, equipment and components must be provided with a test certificate at the factory according to the indications of the Regulations:



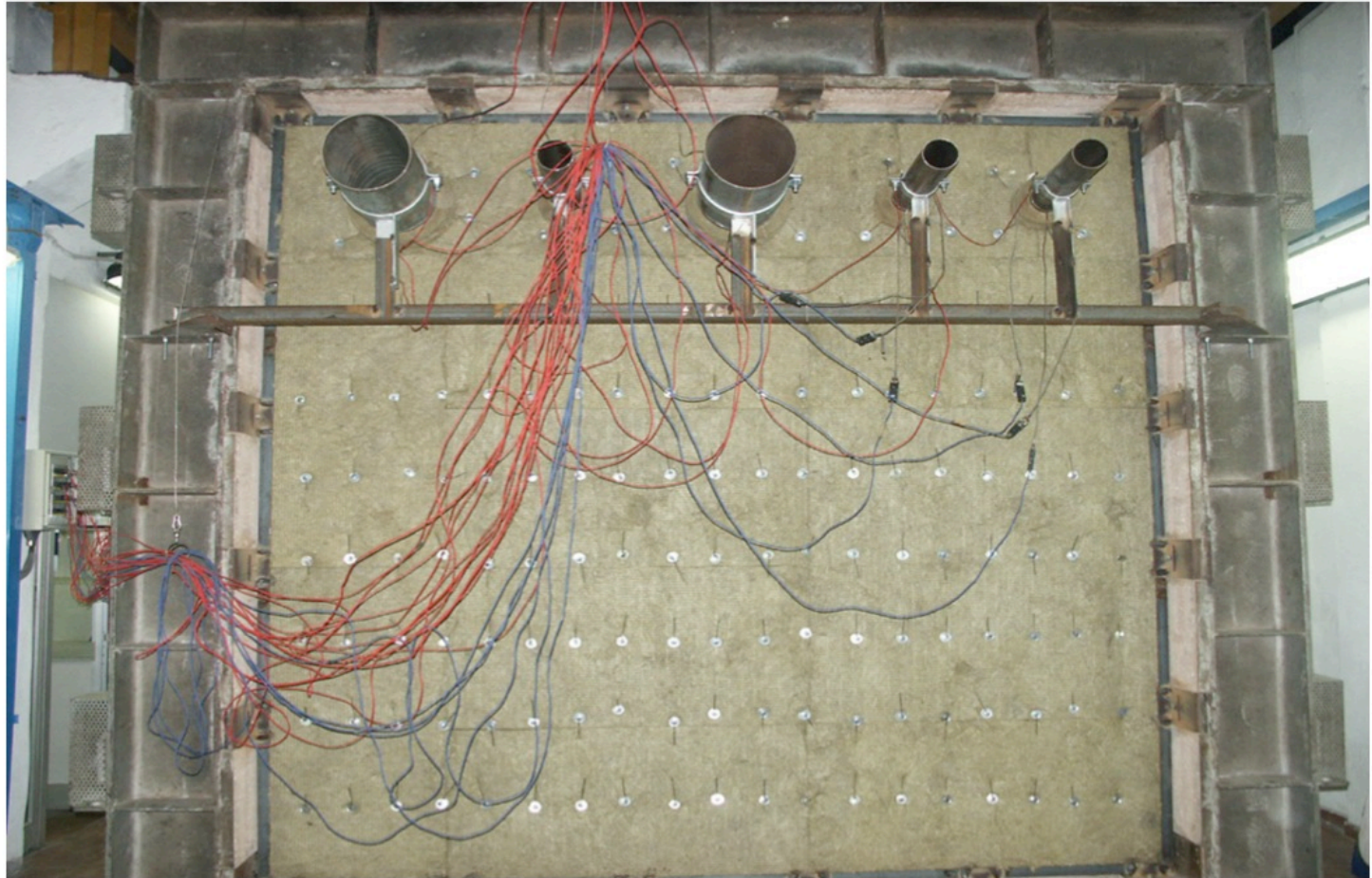
- For some equipment, the approval of the design drawings is required and, possibly, type approval

Test



Fire Test

Unexposed side of the specimen before the test



Fire Test

Exposed side of the specimen after the test



Steel and Iron Products

> Rolled steel plates, sections and bars

- Normal and higher strength steels for hull and other structural applications
- High strength quenched and tempered steels
- Steels for boilers and pressure vessels
- Ferritic steels for low temperature services
- Steels for machinery
- Stainless steel products
- Clad steel plates
- Steels with specified through thickness properties



Steel and Iron Products

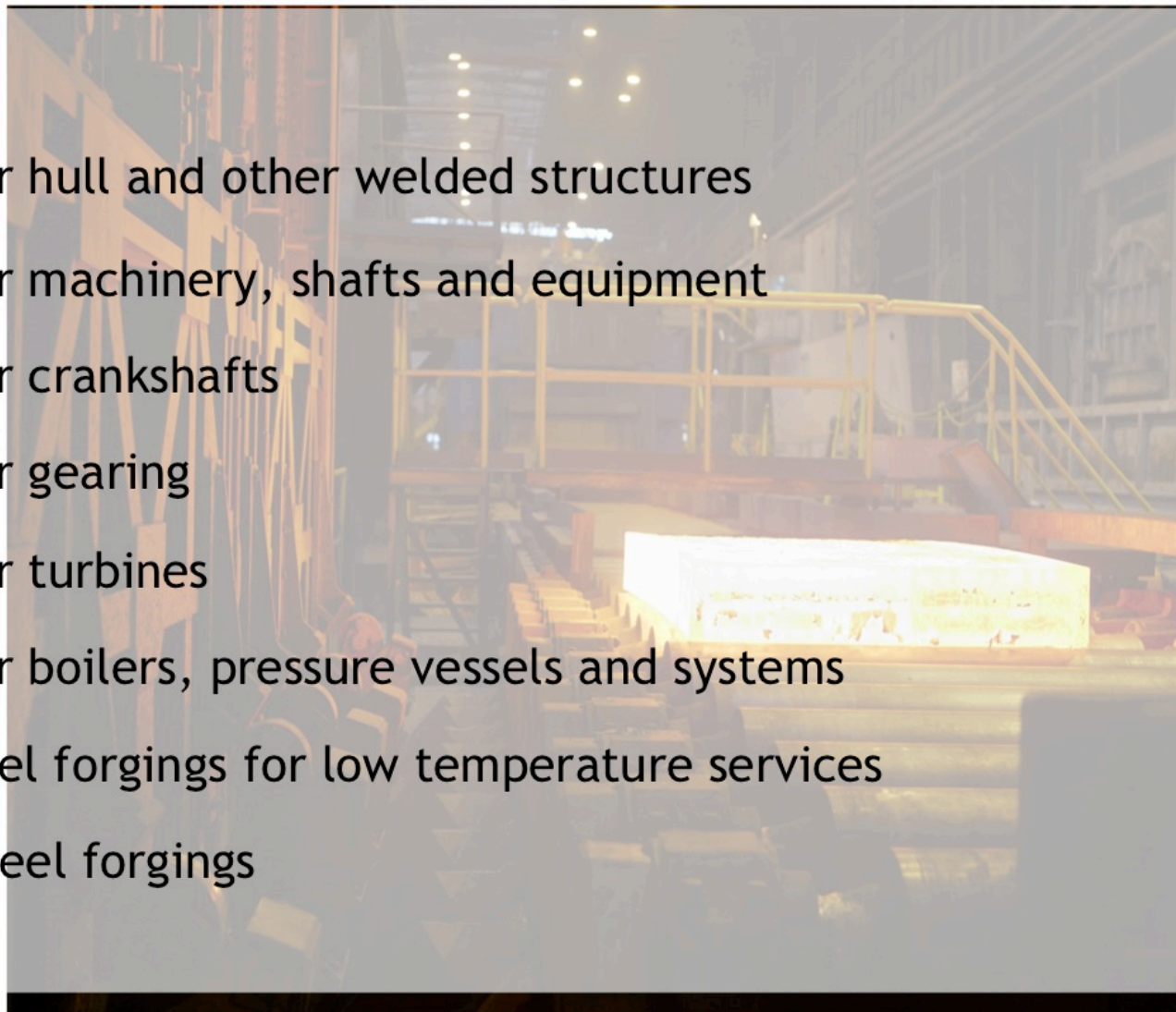
> Steel pipes, tubes and fittings

- Pipes for pressure systems operating at ambient pressure
- Pipes for structural applications
- Pipes for high temperature services
- Ferritic steel pipes for pressure service at low T
- Austenitic and austenitic-ferritic stainless steel pipes
- Fittings

Steel and Iron Products

> Steel forgings

- Forgings for hull and other welded structures
- Forgings for machinery, shafts and equipment
- Forgings for crankshafts
- Forgings for gearing
- Forgings for turbines
- Forgings for boilers, pressure vessels and systems
- Ferritic steel forgings for low temperature services
- Stainless steel forgings



Test Certificate



TEST CERTIFICATE

N°15/XG/01/153/1

RINA file No.: XG/2015/XG/01/153
 Manufacturer or Supplier: MAN DIESEL & TURBO SE - STADTBACHSTRASSE 1 AUGSBURG - GERMANY
 Work Order No.: 1063665
 Purchaser: CANTIERE NAVALE VISENTINI S.R.L. - VIA ROMEA 42 PORTO VIRO (RO) - ITALY
 Order No.: not stated Intended for: RI 93568 - C 231 VISENTINI

THIS IS TO CERTIFY that the items, particulars of which are given below, have been tested and found to be in compliance with the requirements of RINA Rules

The calibration status and adequacy of the test measurements devices used have been satisfactorily verified.

Description of material	Quantity	Serial number
Marine Main Engine [Service: main drive; Maximum Continuous Rating (M.C.R.) (kW): 5400; Revolutions at M.C.R. (rpm): 750; Cycle: four-stroke; No. of cylinders: 9; Piston stroke (mm): 440; Bore (mm): 320; Mean eff. press. at M.C.R. (bar): 27.3; Maximum pressure (bar): 247; Cylinders configuration: in line; Reversible: No; Direction of rotation: clockwise; Cooling medium: water; Approved power (kW) at reference speed: 5400; Reference speed (rpm): 750; Crankcase explosion relief valves (Maker - type): HOERBIGER, 162EVO; Oil mist detector (Maker - type): Schaller, VN115/87 +; Flexible hoses (Maker - type): -; Speed governor (Maker - type): MAN SaCoSonic; Electrical panel(s) (Maker - type): Beijer, EXTER T100]	1	1063665

Inspection and test carried out

- Review of Type Approval certificate(s)
- Visual examination
- Document review
- Functioning test at workshop

Comments: RINA type approved with MAC131213XG/001

Markings:	2015/XG/01/153	4U 91		O6	15	Testing date: 19Jun2015
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Issued at: ESSEN



on:

23 Jun 2015

 T. Ester
 RINA Services S.p.A.

Test Certificate



RINA

TEST CERTIFICATE FOR STEEL ROPES
CERTIFICATO DI COLLAUDO PER CAVI DI ACCIAIO

No. 2015/MI01/436

RINA file No. 2015/MI01/436
Pratica RINA N.

Manufacturer or Supplier SIRTEF s.r.l. Via dei Lavoratori, 1 20080 Calvignasco MI
Fabbricante o Fornitore

Work order No. 52.252/GE
Commessa N.

Purchaser MARINE EQUIPMENT PELLEGRINI s.r.l. VERONA
Committente

Order No. 104792 Intended for Hull 6247-6248 Fincantieri CN
Ordine N. Destinazione

THIS IS TO CERTIFY that the steel ropes, particulars of which are given below, have been tested as per RINA rules with satisfactory results.

Si CERTIFICA che i cavi di acciaio, le cui caratteristiche sono di seguito indicate, sono stati sottoposti agli accertamenti ed alle prove di collaudo previste dai regolamenti del RINA con esito soddisfacente.

The calibration status and adequacy of the test measurements devices used have been satisfactorily verified.

Lo stato di taratura e l'adeguatezza degli strumenti di misura utilizzati per il collaudo sono stati verificati con esito soddisfacente.

Length (m) <i>Luoghezza</i>	<u>30x2 + 30x2</u>	Diameter (mm) <i>Diavetro</i>	<u>24</u>
Construction <i>Formazione</i>	<u>Class 35x7 non rotating CT</u>	Strands <i>Trefoli</i>	<u>21</u>
Lay <i>Senza di avvolgimento</i>	<u>R.H.L.L.</u>	Wires per strand <i>Fili per trefolo</i>	<u>7</u>
Minimum tensile strength of the wires (N/mm ²) <i>Resistenza minima alla trazione del filo</i>	<u>1960</u>	Zinc coating grade <i>Grado di zincatura</i>	<u>B</u>
Minimum breaking strength (kN) <i>Carico di rottura minimo</i>	<u>495</u>	Mass of the rope (kg) <i>Massa del cavo</i>	<u>336</u>

Markings <i>Marche apposte</i>		<u>19</u>	<u>2015/MI01/436</u>	Testing date <i>Data collaudo</i>	<u>25.08.2015</u>
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The results of the tests carried out are shown in the page 2.

I risultati delle prove eseguite sono riportati nella pagina 2.

Enclosures Manufacturer certificate nr. AB18891 / SIRTEF report nr.349/M/2015
Allegati

Issued at Milan on 25.08.2015
Rilasciato a



Tensile test
Prova di trazione

Test on rope sample: 555,6 Breaking strength 555,6 Elongation
Prova su spezzone di cavo Carico di rottura (kN) Allungamento %

Test on wires No. Average breaking strength of the wires R (kN)
Prova su N_fili Carico di rottura medio dei fili R

Rope breaking strength $R_m = R \times N \times K = (kN)$

Carico di rottura del cavo

where N = number of rope wires and K = realization factor

dove N = numero totale dei fili del cavo e K = coefficiente di cordatura

Torsion test
Prova di torsione

Number of tested wires 6 Sample length 100 x d
Numero di fili provati Lunghezza dei campioni

Number of twists before fracture 38 Result (see report nr. 349/M/2015)
Numero di torsioni prima della frattura Risultato

Winding test
Prova di avvolgimento

Number of tested wires Mandrel diameter
Numero di fili provati Diametro mandrino

Number of complete turns Result
Numero di avvolgimenti Risultato

Zinc coating test
Verifica della massa di zinco

Test carried out according to EN 10244 Result manufacturer cert.AB18891
Ferifica effettuata secondo norme Risultato

Notes
Note

A Class Division



Penetrations

Cables – A Class divisions

Fire tested devices are to be applied.



Marine Equipment Directive (MED)

Purpose:

- Free trade within EU
- Uniform test standards
- Avoid multiple approvals



Radio



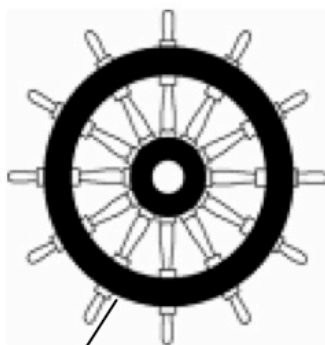
Navigation



MARPOL



Fire Fighting

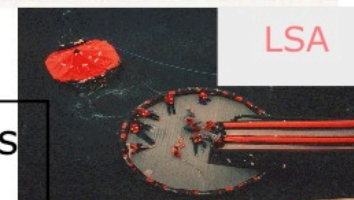


0801 - 99

Mark of Conformity

ID of notified body

Year when equipment was marked



LSA

Fixed Fire Extinguishing Systems

SPRINKLER SYSTEMS

Sprinkler system is a water-based system designed to ensure an average application rate of at least 5/min/m² according to FSS Code.



Type Approved Equipment



Test Certificate



EC TYPE EXAMINATION (MODULE B) CERTIFICATE Nr. MED319815CS/004



ATTACHMENT TO
CERTIFICATE Nr. MED319815CS/004
Page 1 of 3

Manufacturer
MED SRL

Place of Manufacturer
VIA BENEFICIO II TRONCO 57/C
48015 MONTALETTO DI CERVIA (RA)
ITALY

Product description

Shape: square;
Length/width : 2.69 m;
Diameter of buoyancy tubes: 0.286 m;
Volume of buoyancy tubes: 1.253 m³;
Floor area: 4.49 m²;
Working pressure: 0.017 MPa;

Main dimension and type of container:

Type of container	Material	Dimension (LxBxH) cm	Pack	Weight (Kg)	Drop Height
FLAT	VTR	105x57x35	A	107,5	18 mt
FLAT	VTR	105x57x35	B	76,5	18 mt
ROLL	VTR	118x64x59	A	107	25 mt
ROLL	VTR	132x64x59	A	121	25 mt
ROLL	VTR	118x64x59	B	77	25 mt
ROLL	VTR	132x64x59	B	93	25 mt

Inflation system: 1 bottle 10 litres capacity; mass CO₂ = 5658 g; mass of Nitrogen = 342 g

Coated fabrics

- Buoyancy, bottom and canopy support: polyester fabric coated with PVC on both sides 1100 Dtex - 640 g/m² black or orange colored - Mehler Manufacturer type no. 7324 orange (Arimar code 6102160) or 7324 black (Arimar code 610216);
- External canopy: polyester fabric coated with PVC on both sides 550 Dtx - 510 g/m² orange colored - Mehler Manufacturer type no. 7326 (Arimar code 610249)/nylon fabric 210/210 2PU WR orange (Arimar code 610250);
- Inner canopy: Nylon fabric coated with polyurethane 2PU+WR 65g/m² - light blue colored - Manufactured by FAS srl. (Arimar code 610255) / Pam 100%+60g/m² - light blue colored - manufactured by ARIMAR.

Application / Limitation of use

Installation height: see the above table
Required towing force at 2 kts with one sea anchor deployed: 0.75 kN;
Required towing force at 3 kts with one sea anchor deployed: 1.55 kN;
Maximum number of persons allowed: 12 (average weight of 82.5 Kg each);

This is to certify, that RINA, specified as Notified Body N° 0474 by the Italian "Ministero delle Infrastrutture e dei Trasporti Direzione Generale per la navigazione ed il Trasporto Marittimo ed Interno" on 25 November 1998, did undertake the relevant type approval procedures for the equipment identified below which was found to be in compliance with the Life-Save Appliances requirements of Marine Equipment Directive (MED) 96/98/EC as modified by Directive 2014/93/EU

MED Item N°
Description
Type
Applicant

A.1/1.12
Inflatable life-rafts
DEEP-SEA 12P SOLAS
MED SRL
VIA BENEFICIO II TRONCO 57/C
48015 MONTALETTO DI CERVIA (RA)
ITALY

Testing standards
Reference standards

IMO Res. MSC 81(70)
Reg III/13, Reg III/21, Reg III/26, Reg III/31, Reg III/34 of SOLAS 74 Convention as amended; IMO Res MSC 36(63) - 1994 HSC Code - Ch 8; IMO Res MSC 48(66) - (LSA Code) - Ch I, VI; IMO Res MSC 97(73) - 2000 HSC Code - Ch 8; IMO MSC/Circ. 811

Issued at Genoa on
September 30, 2015

This Certificate is valid until
January 29, 2017

This Certificate consists of this sheet plus an attachment

Test Certificate



ATTACHMENT TO
CERTIFICATE Nr. MED319815CS/004
 Page 2 of 3

Tests carried out

Test report witnessed by RINA listed on Prototypes Test list edit by ARIMAR and filed by RINA with n° CSST 8038.

Practical test issued in compliance with MGC 81(70) and MSC295(87), witnessed and filed by RINA with n° 2011CS013227 as following:

Weight test (ref. 5.3(a-f)/P/186)	Swamp test (ref.5.3(a-f)/P/186)
Stability test 8 (ref. 5.9 (a-f)/P/186)	Inflation test + 65°C (5.17.3-6(a-l)/P/186)
Mooling out test (ref. 5.5a/P/186)	Inflation test -30°C (ref 5.17.3-5(a-s)/P/186)
Jump test (ref. 5.2(a-b)/P/186)	Drop test (ref 5.01(a-s)/P/186)
Damage test (ref. 5.17.1(a-f)/P/186)	Loading and seating test (ref.5.7(a-f)/P/186)
Manouvrability test (ref. 5.10(a-f)/P/186)	Towing test (ref.5.4 (a-f)/P186)

Inflation system-Assembly ISO15738 - Tipo 1 (T-M) n° OMO-Z-348 approved by RINA with n° CSST 7235;
 Inflation system-Assembly ISO15738 - Tipo 1 (T-T) n° OMO-Z-349 approved by RINA with n° CSST 7236 ;

Fabric test report list for inflatable tube fabric, external canopy and Internal canopy , edit by ARIMAR and filed by RINA with n° 8039.

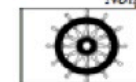
Reference documents

Technical specification (186 - rev D)	appr. no. CSST 7979
OMO-Z-081 General arrangement - rev.1	appr. no. CSST 7973
OMO-Z-381 Deep Sea 12P Canopy	appr. no. CSST 7974
OMO-Z-265/6 Container flat ABS	appr. no. CSST 4046
SPE-Z-332 Container roll VTR	appr. no. CSST 7817
SPE-Z-328 Weak link	appr. no. FPE-7808
SPE-Z-385 Container flat VTR	appr. no. CSST 8017
IST-Z-093 Painterline arrangement	appr. no. FPE-7788
IST-Z-094 Rescue quilt arrangement	appr. no. FPE-7787
IST-Z-145 Semirigid boarding ramp	appr. no. CSST 2395
IST-Z-085 Semirigid boarding ramp	appr. no. FPE-7796
IST-Z-108 Equipment pack (flat cont.)	appr. no. FPE-7781
IST-Z-109 Equipment pack (roll cont.)	appr. no. FPE-7783
IST-Z-095 Markings on container	appr. no. FPE-7786
SPE-Z-385 Stabilizing pocket	appr. no. FPE 7811
SPE-Z-330 Stabilizing pocket	appr. no. FPE-7810
SPE-Z-359 Container for identif. card	appr. no. FPE-7809
SPE-B-391 Patch for towing	appr.no. FPE-7862
SPE-Z-283 Patch detail	appr.no. FPE-2633
SPE-Z-282 Passacorda PVC	appr.no. FPE-7861



ATTACHMENT TO
CERTIFICATE Nr. MED319815CS/004
 Page 3 of 3

The mark of conformity may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production control phase module (D, E or F) of Annex B of the Directive is fully complied with a written inspection agreement with a Notified Body



XXXX/YY

"WHEELMARK FORMAT"

XXXX Notified Body number undertaking surveillance module
 YY Last two digits of year mark affixed

General conditions for the approval

- The initial conditions verified by RINA at the time of the approval are to be maintained
- Any changes to the initial conditions are to be promptly communicated to RINA, which reserves the right to repeat the relevant assessment
- This certificate will no be valid if the manufacturer makes any changes or modifications to the approved equipment, which have not been notified to, and agreed with RINA
- RINA personnel are to be allowed to witness during the performances of activities, upon their request
- The activities are to be carried out in compliance with the RINA Rules and/or other applicable Rules
- Should the specified regulations or standards be amended during the validity of this certificate, the product is to be reaproved prior to it being placed on board vessels to which the amended regulations or standards apply.

Test Certificate



PRODUCT QUALITY ASSURANCE (MODULE D)
CERTIFICATE Nr. MED008615WS



ATTACHMENT TO
CERTIFICATE Nr. MED008615WS

This is to certify that RINA, specified as Notified Body N° 0474 by the Italian "Ministero delle Infrastrutture e dei Trasporti Direzione Generale per la navigazione ed il Trasporto Marittimo ed Interno" on 25 November 1998, did undertake the examination of the equipment identified below with the criteria set-up in Annex B (Production Quality Assurance-Module D) to Marine Equipment Directive (MED) 96/98/EC, and subsequent amendments.

MED Item N°	A.1/1.17a	
Description	Lifeboats: (a) davit-launched lifeboats: partially enclosed / totally enclosed	
Type	BCF-11.7M / BCC-11.7M	
Applicant	ZHEJIANG HENGXIN SHIP EQUIPMENTS CO., LTD. NO.33 BINHAI THE 1ST ROAD TOUMEN PORT NEW INDUSTRIAL ZONE LINHAI CITY ZHEJIANG PROVINCE CHINA	
Module B certificate	Number	MED226514WS
	Date	24/08/2015
	Notified Body	RINA (No.0474)

Issued in SHANGHAI on
September 15, 2015

This Certificate is valid until
September 14, 2018

This Certificate consists of this sheet plus an attachment

On the basis of the conditions stated in article 11 of the Marine Equipment Directive (MED) 96/98/EC, this certificate allow the Manufacturer to affix the following symbol on the equipment above identified



0474/YY

YY Last two digits of year mark affixed

Hong Gu
RINA Services S.p.A.

Equipment:
BCF-11.7M / BCC-11.7M

Manufacturer
ZHEJIANG HENGXIN SHIP EQUIPMENTS CO., LTD.

Place of Manufacturer
NO.33 BINHAI THE 1ST ROAD
TOUMEN PORT NEW INDUSTRIAL ZONE
LINHAI CITY ZHEJIANG PROVINCE
CHINA

Technical documentation

INTERMEDIATE SCHEDULED AND UNSCHEDULED AUDITS			
Due Date	Carried out on	Surveyor's signature	Surveyor's stamp
11/01/2016			
11/07/2016			
11/01/2017			
11/07/2017			
11/01/2018			
Unscheduled			
Unscheduled			

General conditions for the approval

- a) The initial conditions verified by RINA at the time of the approval are to be maintained
- b) Any changes to the initial conditions are to be promptly communicated to RINA, which reserves the right to repeat the relevant assessment
- c) RINA personnel are to be allowed to witness during the performances of activities, upon their request
- d) The activities are to be carried out in compliance with the RINA Rules and/or other applicable Rules
- e) RINA may revoke the approval in the case of modifications to requirements or conditions for the approval
- f) Should the specified regulations or standards be amended during the validity of this certificate, the product is to be reappraised prior to it being placed on board vessels to which the amended regulations or standards apply.
- g) This certificate loses its validity in case the EC type Examination (Module B) certificate is no more valid.

Hong Gu