

РОССИЙСКИЙ МОРСКОЙ РЕГИСТР СУДОХОДСТВА
RUSSIAN MARITIME REGISTER OF SHIPPING

ГЛАВНОЕ УПРАВЛЕНИЕ
HEAD OFFICE

Санкт-Петербург
St. Petersburg



Информационное письмо
Information letter

№ 009-1.8-420ц от 23.10.2009г.
of

КАСАТЕЛЬНО: Re: О содержании и порядке применения поправок Унифицированного требования МАКО Р4 (Rev.4 Dec.2008) "Производство и применение пластмассовых труб на судах" / Contents of and application procedure for amendments of IACS Unified Requirement P 4 (Rev.4, Dec.2008) "Production and Application of Plastic Pipes on Ships".	На основании ЦП: Based on Circular letter: № 009-1.8-420ц от 19.10.2009 № dated	Ввод в действие: Implementation date: 01.01.2010
	Учтены требования нормативных документов (ИМО, МАКО и др.) Requirements of normative documents taken into consideration IMO, IACS and other)	Срок действия: Valid until:
	УТ МАКО Р4 (Rev.4 Dec. 2008) IACS UR P 4 (Rev.4, Dec.2008)	Дополняет/изменяет/отменяет информационное письмо Supplementing/amending/cancelling/ inf. letter № от № dated
ОБЪЕКТ НАБЛЮДЕНИЯ: SUPERVISED ITEM: Пластмассовые трубы и фитинги, Plastic pipes and fittings	Приложение. Количество страниц: 2+2 Annex. Number of pages:	

Зам. генерального директора
Director General/Deputy Director General

Евенко В.И.

подпись

Ф.И.О.

С целью применения в практике Регистра принятого в декабре 2008 года Унифицированного требования (УТ) МАКО Р4 (Rev.4 Dec.2008), до включения его положений в Правила классификации и постройки морских судов, настоящим информируем о его содержании и порядке применения :

1. Изменения в УТ МАКО Р4 (Rev.4 Dec.2008) допускают не проводить гидравлические испытания давлением 1,5 номинального каждой пластмассовой трубы и фитинга в случае, если трубы производятся на автоматизированном производстве с периодическим испытанием образцов в соответствии с признанными международными или национальными стандартами и при этом на предприятии действует эффективная система качества. Регистр, если посчитает нужным, может специально потребовать проведения гидравлических испытаний каждой трубы и фитинга в зависимости от назначения системы на судне.
2. Текст УТ МАКО Р4 (Rev.1 Aug.2008) будет включен в п.6.8.7.4 части XIII "Материалы" Правил классификации и постройки морских судов при переиздании. Текст изменений УТ МАКО Р4 (Rev.4 Dec.2008) - прилагается.
3. Поправки будут применяться Регистром при освидетельствовании производства пластмассовых труб и фитингов с 01 января 2010 года.

With a view to applying IACS Unified Requirement (UR) P 4 (Rev.4, Dec.2008), adopted in December 2008, in the Register practice before including its provisions in Rules for the Classification and Construction of Sea-Going Ships, please be hereby informed of its contents and application procedure:

1. Amendments of IACS UR P 4 (Rev.4, Dec.2008) enable omitting hydraulic testing at a pressure 1.5 times the nominal pressure for each plastic pipe and fitting, if hand layup techniques with periodic testing of specimens in accordance with recognised international or national standards are not used for the pipes, provided there is an effective quality system in place. The Register, where considered necessary, may specially require hydraulic testing of each pipe and fitting depending on the purpose of the ship system.

2..The text of IACS UR P 4 (Rev.1 Aug.2008) will be included in para 6.8.7.4, Part XIII 'Materials' of Rules for the Classification and Construction of Sea-Going Ships when reediting them. The text of amendments of IACS UR P4 (Rev.4, Dec.2008) is attached.

3..Amendments will be applied by the Register when surveying the plastic pipe and fitting manufacture from 01 Januray 2010.

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P4 Production and Application of Plastic Pipes on Ships*

(1996)
(Corr. 1
1997)
(Rev. 1
May
1998)
(Rev. 2
July
1999)
(Rev. 3
Feb
2005)
(Rev. 4
Dec
2008)

P4.1 Terms and Conditions

- .1 "Plastic(s)" means both thermoplastic and thermosetting plastic materials with or without reinforcement, such as PVC and fibre reinforced plastics - FRP.
- .2 "Pipes/piping systems" means those made of plastic(s) and include the pipes, fittings, system joints, method of joining and any internal or external liners, coverings and coatings required to comply with the performance criteria.
- .3 "Joint" means joining pipes by adhesive bonding, laminating, welding, etc.
- .4 "Fittings" means bends, elbows, fabricated branch pieces etc. of plastic materials.
- .5 "Nominal pressure" means the maximum permissible working pressure which should be determined in accordance with the requirements in P 4.3.1.
- .6 "Design pressure" means the maximum working pressure which is expected under operation conditions or the highest set pressure of any safety valve or pressure relief device on the system, if fitted.
- .7 "Fire endurance" means the capability of piping to maintain its strength and integrity (i.e. capable of performing its intended function) for some predetermined period of time while exposed to fire.

P4.2 Scope

- .1 These requirements are applicable to plastic pipes/piping systems on ships.
- .2 The requirements are not applicable to flexible pipes and hoses and mechanical couplings used in metallic piping systems.
- .3 Piping systems made of thermoplastic materials, such as polyethylene(PE), polypropylene(PP), polybutylene(PB) and intended for non-essential services are to meet the requirements of recognized standards and P4.5 and P4.6 of this UR.

* This UR addresses the provisions of IMO Res. A.753(18).

Note:

1. Rev.3 introduced new section P4.7. The requirements of UR P4.7 are to be uniformly implemented by all IACS Societies to any new plastic pipe submitted for approval from 1 January 2007 and to any existing plastic pipe from the date of the first renewal of approval after 1 January 2007.

2. Changes introduced in Rev. 4 of this UR P4.5 are to be uniformly implemented by IACS Members and Associates from 1 January 2010.

P4
(cont)

.3 The Manufacturer is to have quality system that meets ISO 9000 series standards or equivalent. The quality system is to consist of elements necessary to ensure that pipes and fittings are produced with consistent and uniform mechanical and physical properties.

.4 Each pipe and fitting is to be tested by the Manufacturer at a hydrostatic pressure not less than 1.5 times the nominal pressure. Alternatively, for pipes and fittings not employing hand lay up techniques, the hydrostatic pressure test may be carried out in accordance with the hydrostatic testing requirements stipulated in the recognised national or international standard to which the pipe or fittings are manufactured, provided that there is an effective quality system in place.

.5 Piping and fittings are to be permanently marked with identification. Identification is to include pressure ratings, the design standards that the pipe or fitting is manufactured in accordance with, and the material of which the pipe or fitting is made.

.6 In case the Manufacturer does not have an approved quality system complying with ISO 9000 series or equivalent, pipes and fittings are to be tested in accordance with this UR to the satisfaction of the Classification Society's surveyors for every batch of pipes.

.7 Depending upon the intended application a Society may require the pressure testing of each pipe and/or fitting.

P4.6 Installation**4.6.1 Supports**

.1 Selection and spacing of pipe supports in shipboard systems are to be determined as a function of allowable stresses and maximum deflection criteria. Support spacing is not to be greater than the pipe Manufacturer's recommended spacing. The selection and spacing of pipe supports are to take into account pipe dimensions, mechanical and physical properties of the pipe material, mass of pipe and contained fluid, external pressure, operating temperature, thermal expansion effects, loads due to external forces, thrust forces, water hammer, vibrations, maximum accelerations to which the system may be subjected. Combination of loads is to be considered.

.2 Each support is to evenly distribute the load of the pipe and its contents over the full width of the support. Measures are to be taken to minimize wear of the pipes where they contact the supports.

.3 Heavy components in the piping system such as valves and expansion joints are to be independently supported.

4.6.2 Expansion

.1 Suitable provision is to be made in each pipeline to allow for relative movement between pipes made of plastic and the steel structure, having due regard to:

- (i) the difference in the coefficients of thermal expansion;
- (ii) deformations of the ship's hull and its structure.

2. When calculating the thermal expansions, account is to be taken of the system working temperature and the temperature at which assembly is performed.

4.6.3 External Loads