

EU RO Mutual Recognition Technical Requirements

INSULATION PANELS FOR PROVISION ROOMS & CHAMBERS	Version	0.2
	Adoption Date	1 April 2016
	Application Date	1 October 2016
	Tier	3
This document is subject to controlled issue and can be found here: http://www.euromr.org/technical-requirements *** Uncontrolled if downloaded or printed ***		

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1. PRODUCT DESCRIPTION

1.a General description of the product

These technical requirements apply to rigid polyurethane foam panels used to insulate refrigerated provision chambers. Panels can be of the built-up (fabricated in place) or composite design.

1.b Application limitations

The application is limited to provision rooms and food preparation chambers. Other areas such as accommodation and service spaces, machinery spaces and cargo holds are outside the scope of this Technical Requirement.

1.c Intended use

The insulation being used to form; deep frozen, chilled and ambient storage rooms and handling areas used for the storage and preparation of ship's provisions.

1.d System context

Provision storage chambers, temperature controlled by mechanical refrigeration, need to have resistance to heat flow. Deep frozen chamber (minus 18°C) also need to be hermetically sealed to reduce water vapour penetration. The thickness and density of the insulation being governed by the internal/external temperature differential, panel height and roof span.

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2. DESIGN EVALUATION

2.a Engineering evaluation requirements

2.a i. Technical Requirements

- a) Panels shall be of a design that, when erected, adjacent panels can be butted along their edges and at corner and ceiling intersections, with a means of joining having sufficient mechanical strength;
- b) Where no external fixtures are used the panels shall have sufficient inherent strength to form and maintain a self-supporting structure;
- c) Panels shall be of a design such that, when erected, continuity of the insulation envelope is maintained without any gaps thus forming and maintain a vapour barrier at the external face;
- d) Internal or external surfaces of insulating panels shall not to be used to support auxiliary services such as electrical cables, fire-extinguishers, etc., unless due regard has been given to the supported weights and to maintaining the integrity of the vapour barrier;
- e) Materials suitably resistant to fire, lining suitably resistant to flame spread, effective protection against penetration of water vapour;
- f) Self-contained chambers and rooms operating at chill and cold temperature shall be fitted with pressure equalising valves to stop the deformation of panels and formation of gaps during defrost cycles;
- g) Electrical equipment and wiring shall effectively isolate from organic foam materials by steel sheet or conduit as appropriate, and there shall be an adequate space between the foam and the protective sheet or conduit.

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2.a.ii. Technical documents to be submitted

IMPORTANT: The English Language shall be used for all submitted documents.

- Details of the proposed insulation envelope system, including insulating and lining materials. The physical, thermal and fire properties of the built-up or composite panel system;
- Details of all materials to be used in the manufacture of insulation, including blowing agent utilised;
- Plans of the panels and intended method of installation of adjoining wall panels and installation of roof panels.

2.b Type testing requirements

The following type tests shall be conducted in accordance with the indicated standard (or recognised equivalent standard) to verify arrangement and design:-

- Closed Cell Content, ISO 4590;
- Fire behaviour (burning characteristics), DIN 4102 - Part 1;
- Flame spread characteristics, ISO 5658-2;
- Density, ISO 845;
- Water vapour penetration, ISO 1663;
- Compressive strength, ISO 844;
- Bending strength, ISO 1209.
- Thermal resistance, ISO 8301;

Test specimens shall be selected from production line or at random from stock†. Tests shall be carried out in the presence of the EU RO Surveyor. In cases where the tests are conducted at Nationally Accredited Laboratories, the presence of the EU RO surveyor may be omitted†.

† For further clarification of witnessing of tests and sampling the test specimen(s), refer to paragraphs 6, 7 and 8 of the EU RO "Design Evaluation Scheme" procedure (Appendix V of EU RO Framework Document for the Mutual Recognition of Type Approval found on

<http://www.euromr.org/Guidance%20for%20Mutual%20Recognition>)

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3. PRODUCTION REQUIREMENTS

- The manufacturer must have in place a suitable quality system, such as ISO 9001;
- The lining material and floor finishes shall be suitable for the application;
- Panels shall be suitably wrapped prior to leaving the works to alleviate the effect of the panels being stored in open conditions;
- Details of the foam type, polyisocyanurate or polyurethane, the producer of the raw materials, their designation, the nominal density of the insulation and the blowing agent material should be provided;
- Refer to EU RO "Product Quality Assurance (PQA)" procedure (Appendix VI of EU RO Framework Document for the Mutual Recognition of Type Approval).

4. MARKING REQUIREMENTS

Manufacturers of the approved equipment are, in principle, to mark the product before shipment for identification of approved equipment as per referenced standard. In addition, and as a minimum, the following items to be marked at the suitable place:

- Manufacturer's name or trade mark;
- Type designation under which the product is type approved.

5. TYPE APPROVAL CERTIFICATE CONTENT

The EU RO MR Type Approval Certificate shall contain the minimum information as defined in the "EU RO Framework Document for the Mutual Recognition of Type Approval" - see Appendix I EU RO MR Type Approval Certificate Information.

6. APPROVAL DATE AND REVISION NUMBER

Date	Revision	Comment
31 January 2013	0.0	Approved by the Advisory Board
31 January 2015	0.1	CRF018 – Revision to par. 2.a.ii - Technical documents to be submitted in English; CRF020 – Revision to par. 5 - 'Type Approval Certificate Content'
1 April 2016	0.2	CRF025 – Updated to new MR TR document format incl. par. 8; CRF026/026a – Witness testing & control of test specimen; CRF028 – addition of 6 month application clause.

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7. BACKGROUND AND REFERENCE DOCUMENTS

- a) Details of the codes and standards used to determine the products thermal, physical and fire properties;
- b) Copy of the panel system erection handbook or its installation manual;
- c) Regional Legislation: European Union Regulation (EC) No. 842/2006
- d) EU RO Framework Document for the Mutual Recognition of Type Approval.

8. MAINTENANCE / CLARIFICATION OF TECHNICAL REQUIREMENTS

Anyone wishing to propose changes to this document or request clarification of technical issues should contact the EU RO MR Group Secretariat in the first instance: Secretariat@euomr.org.

Review and approval of change requests shall follow the EU RO MR Maintenance Process detailed in the EU RO Framework Document for the Mutual Recognition of Type Approval: <http://www.euomr.org/Guidance%20for%20Mutual%20Recognition>.

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