

VTT Expert Services Oy  
PL 1001 (Kemistintie 3)  
02044 VTT  
Puh. + 358 20 722 4911  
Telekopio +358 20 722 7003



Rakennustuotedirektiivin (89/106/EEC) artiklan 10,  
neuvoston direktiivi 21. joulukuuta 1988,  
mukaisesti notifioitu tuotehyväksyntälaitos

EOTAN JÄSEN

## **Eurooppalainen tekninen hyväksyntä ETA-07/0071** **European Technical Approval**

### **Kauppanimi:**

Trade name

**Paroc UNS 37 ja eXtra väliseinäjärjestelmät**  
**Paroc UNS 37 and eXtra partition kits**

### **Hyväksynnän haltija:**

Holder of approval:

Paroc Group  
Läkkisepäntie 23, P.O. Box 47  
FI-00621 Helsinki

### **Tuotetyppi ja sen käyttötarkoitus:**

Generic type and use of construction  
product:

**KUIVIEN TILOJEN VÄLISEINÄJÄRJESTELMÄT**

**NON- LOAD BEARING PARTITION KITS FOR DRY  
ROOMS**

### **Voimassaoloaika:**

Validity from/to

**From May 28, 2012 to May 27, 2017**

### **Tämä versio korvaa:**

This version replaces:

**ETA-07/0071 valid from May 28, 2007 to May 27, 2012**

### **Valmistuspaikat:**

Manufacturing plants:

Finland: Parainen, Lappeenranta and Oulu  
Sweden: Hällekis and Hässleholm  
Poland: Trzemeszno  
Lithuania: Vilnius

### **Tämä hyväksyntä sisältää**

This European Technical Approval  
contains

sivuja/liitteitä

13 sivua sisältäen 2 liitettä

pages/annexes

13 pages including 2 annexes



Eurooppalainen tekninen hyväksyntäorganisaatio  
European Organisation for Technical Approvals

## I LEGAL BASES AND GENERAL CONDITIONS

1. This European Technical Approval is issued by the VTT Expert Services Ltd in accordance with:
  - Council Directive 89/106/EEC of 21 December 1988 on the approximation of laws, regulations and administrative provisions of Member States relating to construction products<sup>1</sup>, modified by the Council Directive 93/68/EEC of 22 July 1993<sup>2</sup>; and regulation (EC) N° 1882/2003 of the European Parliament and of the Council<sup>3</sup>;
  - Laki rakennustuotteiden hyväksynnästä (230/2003) luvut 3 ja 10, Ympäristöministeriön asetus rakennustuotteiden hyväksynnästä 3 § sekä Ympäristöministeriön 18.12.2009 antama valtuutus päätös (19/629/2009).
  - Common Procedural Rules for Requesting, Preparing and the Granting of European Technical Approvals set out in the Annex of Commission Decision 94/23/EC<sup>4</sup>;
  - Guideline for European Technical Approval of Internal partition kits for use as non-load bearing walls, ETAG 003, edition December 1998.
2. The VTT Expert Services Ltd is authorised to check whether the provisions of this European Technical Approval are met. Checking may take place in the manufacturing plant (for example concerning the fulfilment of assumptions made in this European Technical Approval with regard to manufacturing). Nevertheless, the responsibility for the conformity of the products with the European Technical Approval and for their fitness for the intended use remains with the holder of the European Technical Approval.
3. This European Technical Approval is not to be transferred to manufacturers or agents of manufacturer other than those indicated on page 1; or manufacturing plants other than those indicated on page 1 of this European Technical Approval.
4. This European Technical Approval may be withdrawn by the VTT Expert Services Ltd (pursuant to Article 5 (1) of the Council Directive 89/106/EEC.
5. Reproduction of this European Technical Approval including transmission by electronic means shall be in full. However, partial reproduction can be made with the written consent of VTT Expert Services Ltd. In this case partial reproduction has to be designated as such. Texts and drawings of advertising brochures shall not contradict or misuse the European Technical Approval.
6. The European Technical Approval is issued by VTT Expert Services Ltd in English. This version corresponds to the version circulated within EOTA. Translations into other languages have to be designated as such.

---

<sup>1</sup> Official Journal of the European Communities N° L 40, 11.2.1989, p. 12

<sup>2</sup> Official Journal of the European Communities N° L 220, 30.8.1993, p. 1

<sup>3</sup> Official Journal of the European union N° L 284, 31.10.2003, p. 25

## **II SPECIFIC CONDITIONS OF THE EUROPEAN TECHNICAL APPROVAL**

### **1. Definition of the product and intended use**

The Paroc partition kit comprises galvanised steel or timber studs one, two or three layer plasterboard surfaces on both sides and thermal insulation inside the walls. The plasterboards are fastened onto steel or timber studs with defined fastenings. The tightening of the joints of the partitions is made by gypsum plaster.

The tightening between the partition and ceiling and floor is done on site according to the installation instructions of the manufacturer, for example Knauf, either with acrylic sealant (acoustic walls) or with mineral wool of reaction to fire class A1 or with non combustible sealant. Sealing products are not part of this ETA. The tightening of possible gaps like electrical installations shall be done to secure the air tightness of the gap and in case of fire walls also with non combustible materials.

The distance between the studs is 600 mm. The cross section dimensions of the steel studs is 66- 70 mm or 95 mm and timber studs 70 mm. The steel studs are made of 0,56 mm thick galvanized cold rolled steel according to the standards EN 10142 and EN 10147 with zinc coating 275 g/ m<sup>2</sup>. The timber studs are spruce.

The thickness of the plasterboard is 12,5 mm. The plasterboards fulfil the criteria of the standard EN 520 and have the properties presented in paragraph 2 and appendix 1 of this ETA. The maximum height of the walls and gypsum boards is 3 m. The width of the gypsum boards is 1200 mm.

The insulation of the walls is stone wool which fulfils the criteria of standard EN 13162 and has a fire class A1 and designation code MW-EN 13162-T4-DS(T+)-WS-WL(P)-MU1 or MW-EN 13162-T2-DS(T+)-WS-WL(P)-MU1 and which fulfils the criteria presented in Appendix 1 of this ETA.

The different types of the partition kits are presented in the Appendix 2.

The Paroc partition kits are intended to be used as non load bearing partitions in dry spaces especially where the partitions have fire resistance and/or sound insulation requirements.

The partition kit is fastened to the load bearing structure with air tight sealing and according to the designers or gypsum board suppliers, for example Knauf, instructions. The fastening devices are not part of this ETA.

The provisions made in this ETA are based on an assumed intended working life for a partition kit of 25 years provided that the kit is subjected to appropriate use and maintenance. The indications given on the working life cannot be interpreted as a guarantee given by the producer or the approval body, but are to be used as a means for selecting the appropriate product in relation to the expected economically reasonable working life of the works.

## 2. Characteristics of product and assessment

ETAG paragraph	Characteristic	Assessment of the characteristic
	<b>2.1 Mechanical resistance and stability</b>	Not relevant
6.2.1	<b>2.2 Safety in case of fire</b> Reaction to fire	The gypsum boards conforming to EN 520 are classified as Euroclass A2-s1,d0 The thermal insulation material is classified to Euroclass A1 The steel profiles are classified to Euroclass A1 The timber studs are classified to Euroclass F
6.2.2	Resistance to fire	Classified <b>EI 45</b> , <b>EI 60</b> or as <b>EI 90</b> depending on the partition construction type (see Appendix 2)
	<b>2.3 Hygiene, health and environment</b>	
6.3.1	Influence on air quality	No dangerous materials *)
6.3.2	Water vapour permeability	No performance determined (not relevant) The wall will be levelled and painted or wall papered depending on the purposes of end use
	<b>2.4 Safety in use</b>	
6.4.1	Resistance to structural damage from impact loads	<b>All partition types: Use category I</b>
6.4.1	Resistance to structural damage and functional failure from eccentric vertical load	No performance determined
6.4.2	Safety against personal injury by contact	When properly installed, the wall system does not contain sharp or abrasive components liable to cause personal injury
	<b>2.5 Protection against noise</b>	
6.5.1	Sound insulation	$R_w$ (100 - 3150 Hz) between <b>45 - 65 dB</b> depending on the partition construction type (see Appendix 2) or <b>NPD</b>
	<b>2.6 Energy economy and heat retention</b>	
6.6.1	Thermal resistance	No performance determined
6.6.2	Thermal inertia	No performance determined
	<b>2.7 Related aspects of serviceability</b>	
6.7.1.1 and 6.7.1.2	Resistance to functional failures from impact loads	<b>Use category I</b>
6.7.1.3	Resistance to functional failure from eccentric vertical loads	No performance determined
6.7.1.4	Resistance to point vertical loads	No performance determined
6.7.1.5	Rigidity of partitions to be used as a substrate for ceramic tiling	No performance determined
6.7.2	Protection against deterioration caused by hygrothermal conditions	No performance determined.
	Protection against deterioration caused by corrosion	The system is used in dry conditions
	Protection against deterioration caused by biological agents	There are no provisions for biological agents to act in the materials in dry conditions.
	Protection against deterioration caused by cleaning agents	The wall will be levelled and painted or wall papered and will thus not be in contact with cleaning agents.

\*In addition of the specific clauses relating to dangerous substances contained in this European Technical Approval, there may be other requirements applicable to the products falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the Construction Products directive, these requirements need also to be compiled with, when and where they apply.

\* Note: Fibre lengths and diameters of the mineral wool according to the EUCB rules.

### **3. Evaluation of conformity and CE marking**

#### **3.1 Attestation of conformity system**

The attestation of conformity applied to this product specified by the European Commission in Mandate Construct 97/243 REV.1, Annex 3 is system 3, since there is no improvement of the reaction to fire classification in the production process.

#### **3.2 Tasks for the manufacturer**

##### ***3.2.1 Factory production control***

The manufacturer continues to operate a factory production control system. Quality control checks are made on incoming materials, and at regular stages throughout the production sequence to ensure the quality and fitness for use of the components.

Mineral wools are CE-marked and controlled by the manufacturer and notified body.

The quality control of the other partition components includes checking of:

- Dimensions (plasterboard, Profiles)
- Material quality (incoming materials data sheets)
- Square wight of the gypsum boards and paper used on it
- Amount of zinc (profiles)

VTT Expert Services Ltd maintains a file describing the tasks and tests imposed on ETA holder and the component manufacturers by the approval holder.

The file includes information of the main components of the kit, i.e. plaster boards, insulation material, steel and timber studs, and fixings. The file include also the control plan which include the type and frequency of the control agreed between VTT Expert Services Ltd and approval holder.

##### ***3.2.3 Initial type testing of the product***

For initial type testing the results of the tests performed as part of the assessment for this European Technical Approval shall be used unless there are changes in the production line or plant. In such cases the necessary type testing has to be agreed between VTT Expert Services Ltd and the approval holder.

#### **3.3 CE-marking**

The CE-marking shall be affixed to each delivery of partition kit and accompanying commercial documents.

The symbol "CE" shall be accompanied by the following information:

- Name of the product: Commercial trade name as indicated in this ETA
- Name of the ETA holder and manufacturer(s) ( both/all if they are separate)
- The last two digits of the year in which the CE marking was affixed
- Number of the European Technical Approval

## **4. Assumptions under which the fitness of the product for the intended use was favourably assessed**

### **4.1 Manufacturing**

All materials of the partition kits belonging into the ETA shall be in accordance with the provisions laid down in the European Technical Approval. All materials used in the partitions shall fulfil the criteria given in this ETA.

### **4.2 Installation and design rules**

#### **4.2.1 Design rules**

The partition kits are installed into indoor spaces with normal indoor temperature and moisture conditions.

#### **4.2.2 Installation**

The partition kit will be installed according to the separate installation instructions of the ETA holder "How to work with Paroc stone wool, dated on March 2006 and "Installation Guideline for Paroc partitions". Dated on May 2007.

It is important that all contractors are educated and trained how the walls shall be erected and installed and in which cases and how the gaps to the walls can be made without affecting the intended performance of the wall.

### **4.3 Maintenance and repair**

The assessment of the fitness for use is based on the assumption that abrasion and minor impact damage are inevitable and shall be easy to repair. In case of damage, repair can be made with gypsum based mortar or levelling.

On behalf of VTT Expert Services Ltd

Espoo 27.05.2012



Lina Markelin-Rantala  
Team Manager



Liisa Rautiainen  
Assessment Manager

**Materials used in the partitions**

<b>Material</b>	<b>Specification</b>
Gypsum plasterboards Paper faced	Normal quality, thickness 12,5 mm, square weight 9 kg/m <sup>2</sup> Produced according to EN 520, type A
Joint sealing material	Gypsum based float 0,2 - 0,3 kg/m <sup>2</sup>
Steel studs	Thickness of steel 0,56 mm. Weight of zinc is 275 g/m <sup>2</sup> , which is equal to 20 µm. The standard EN 14195 for metal framing for gypsum plasterboard systems define the steel acc. EN 10326 or 10327. Shape according to Appendix 2
Wooden studs	Normal construction quality spruce, min thickness 35 mm and width according to the thickness of the wall.
Screws	3,5x25 mm (steel) 3,9x32 mm (wood) Galvanized in lowest class Zn5
Thermal insulation	Paroc UNS 37, UNS 37z or Paroc eXtra; unfaced mineral wool slabs, fire class A1, thermal conductivity 0,037 or 0,036 W/mK and designation code MW-EN 13162-T4-DS(T+)-WS-WL(P)-MU1 or MW-EN 13162-T2-DS(T+)-WS-WL(P)-MU1
Acrylic sealant	According to the recommendations of the gypsum plasterboard producers

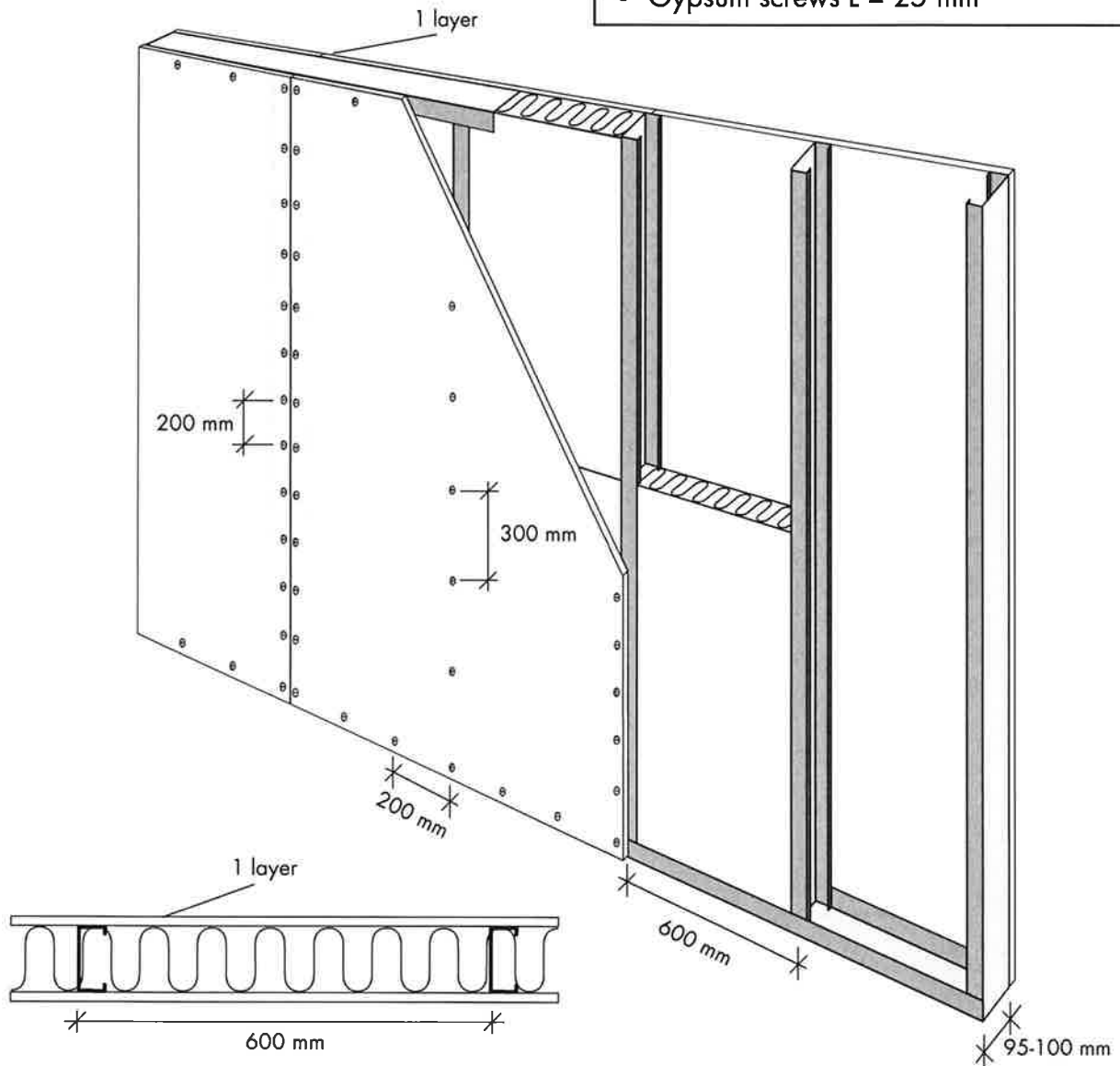
Detailed drawings of the partitions 1 – 6 on pages 9 – 14.



# Partition 1

2006-001

- Ceiling and floor profile 95-100 mm
- Steel studs 95-100 mm, c 600 mm
- 1 layer of gypsum board 12,5 mm on each side
- PAROC UNS 37/PAROC EXTRA 95-100 mm
- Gypsum screws L = 25 mm



Fire class	Sound class
EI 60	$R_w = 45 \text{ dB}$ $R_w + C_{50-3150} = 40 \text{ dB}$ $R'_w = 36 \text{ dB}$ $R'_w + C_{50-3150} = 32 \text{ dB}$

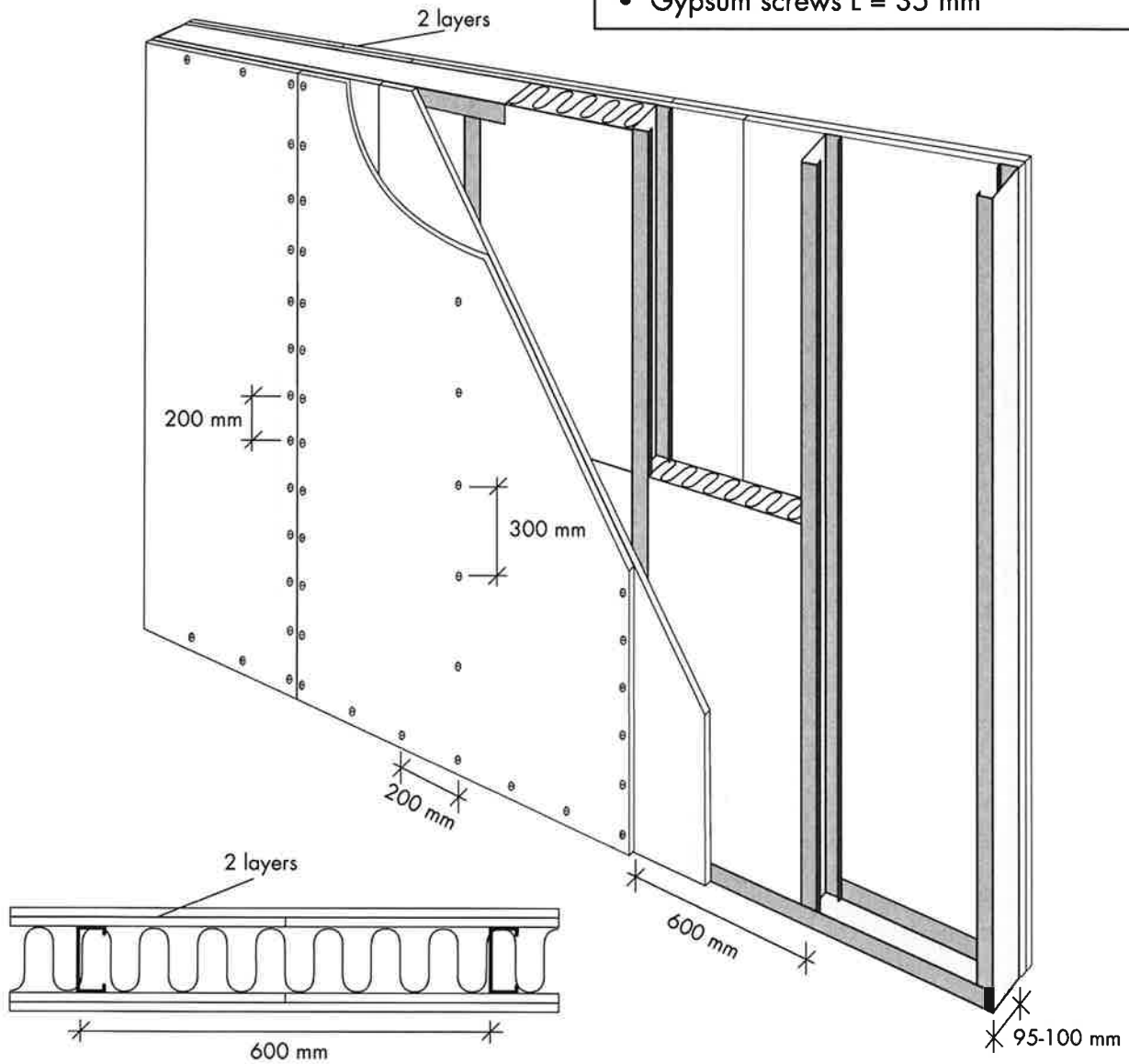
Total wall thickness: 121-126 mm

**PAROC®**

# Partition 2

2006-002

- Ceiling and floor profile 95-100 mm
- Steel studs 95-100 mm, c 600 mm
- 2 layers of gypsum board 12,5 mm on each side
- PAROC UNS 37/PAROC EXTRA 95-100 mm
- Gypsum screws L = 35 mm



**Total wall thickness: 147-152 mm**

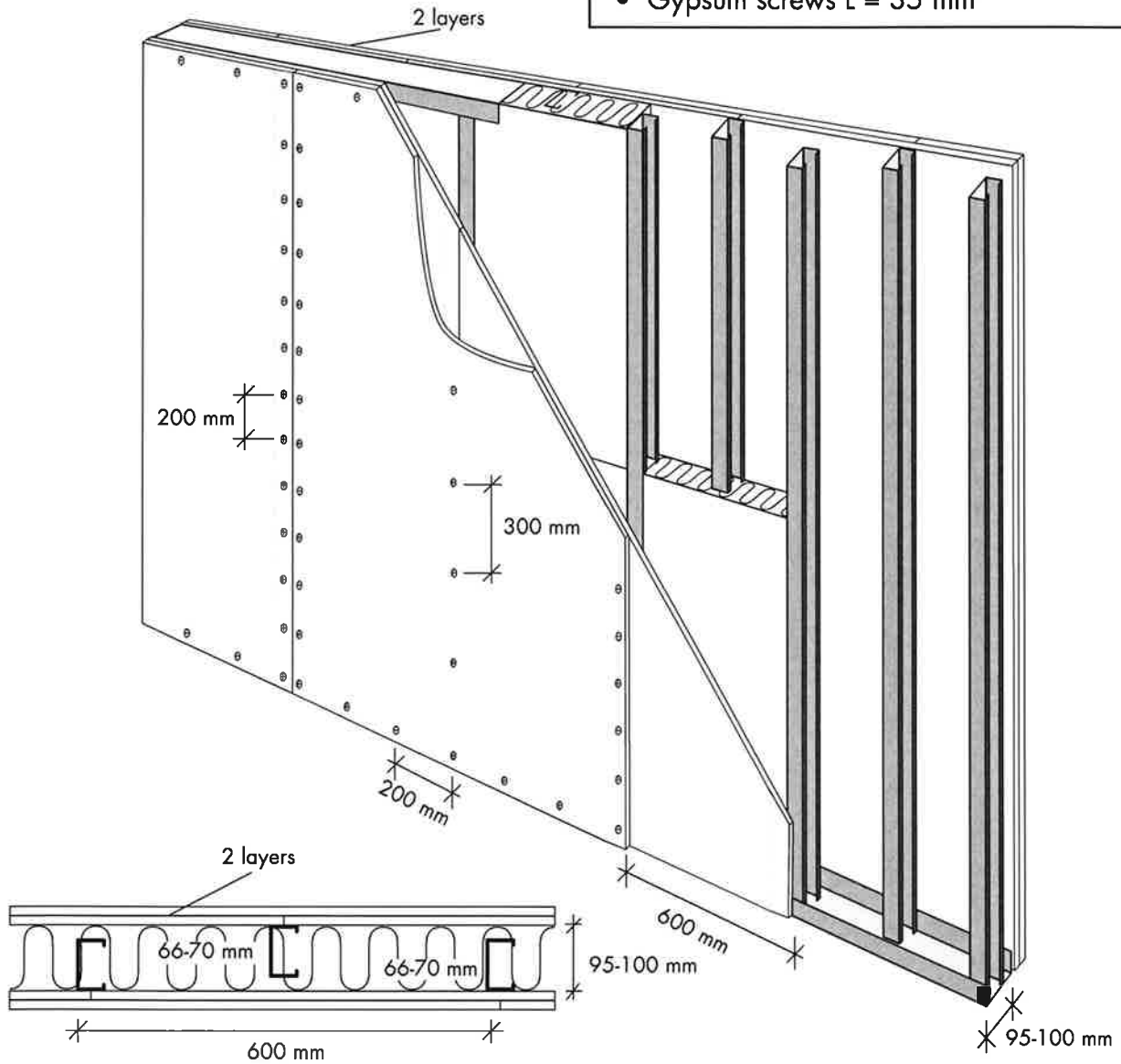
Fire class	Sound class
EI 90	$R_w = 55 \text{ dB}$ $R_w + C_{50-3150} = 48 \text{ dB}$ $R'_w = 44 \text{ dB}$ $R'_w + C_{50-3150} = 40 \text{ dB}$



# Partition 3

2006-003

- Ceiling and floor profile 95-100 mm
- Steel studs zig zag 66-70 mm, c 600 mm
- 2 layers of gypsum board 12,5 mm on each side
- PAROC UNS 37/PAROC EXTRA 95-100 mm
- Gypsum screws L = 35 mm



**Total wall thickness: 147-152 mm**

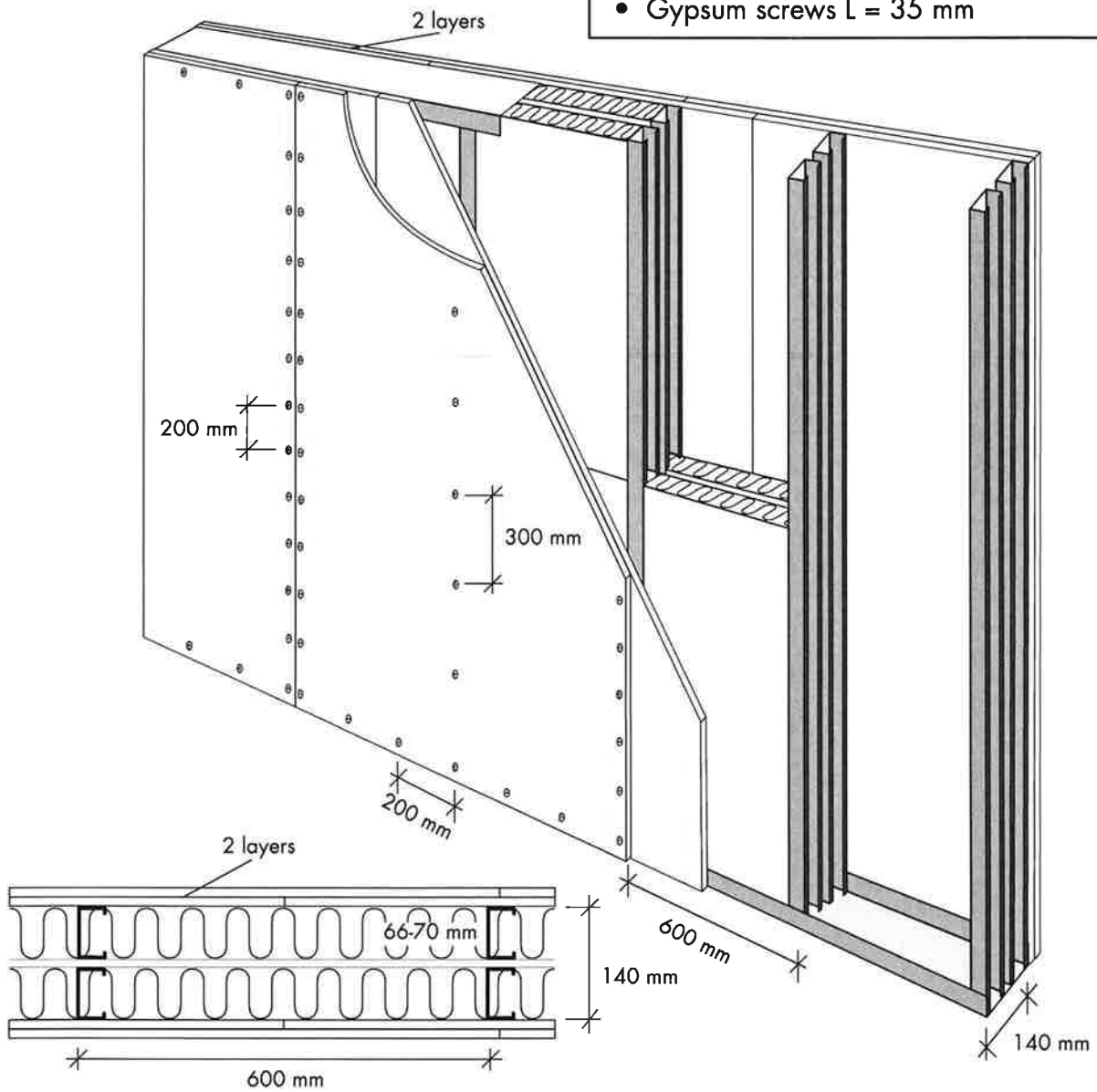
Fire class	Sound class
EI 90	$R_w = 58 \text{ dB}$ $R_w + C_{50-3150} = 51 \text{ dB}$ $R'_w = 48 \text{ dB}$ $R'_w + C_{50-3150} = 44 \text{ dB}$



# Partition 4

2006-004

- Ceiling and floor profile 140-150 mm
- Steel studs 2 x 66-70 mm with airgap
- 2 layers of gypsum board 12,5 mm on each side
- PAROC UNS 37/PAROC EXTRA 2 x 66-70 mm
- Gypsum screws L = 35 mm



**Total wall thickness: 192-202 mm**

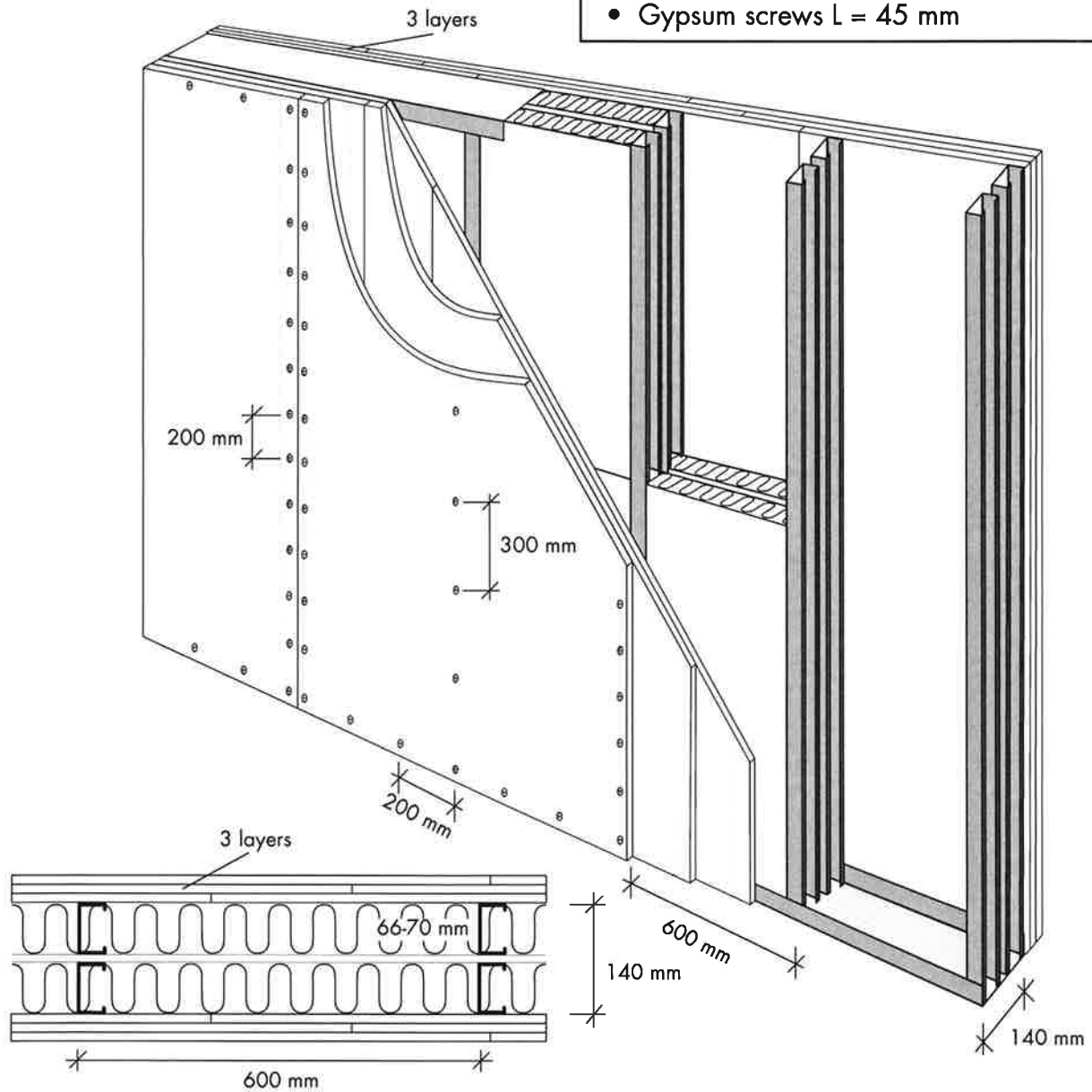
Fire class	Sound class
EI 90	$R_w = 63 \text{ dB}$ $R_w + C_{50-3150} = 56 \text{ dB}$ $R'_w = 56 \text{ dB}$ $R'_w + C_{50-3150} = 52 \text{ dB}$



# Partition 5

2006-005

- Ceiling and floor profile 140-150 mm
- Steel studs 2 x 66-70 mm with airgap
- 3 layers of gypsum board 12,5 mm on each side
- PAROC UNS 37/PAROC EXTRA 2 x 66-70 mm
- Gypsum screws L = 45 mm



**Total wall thickness: 218-228 mm**

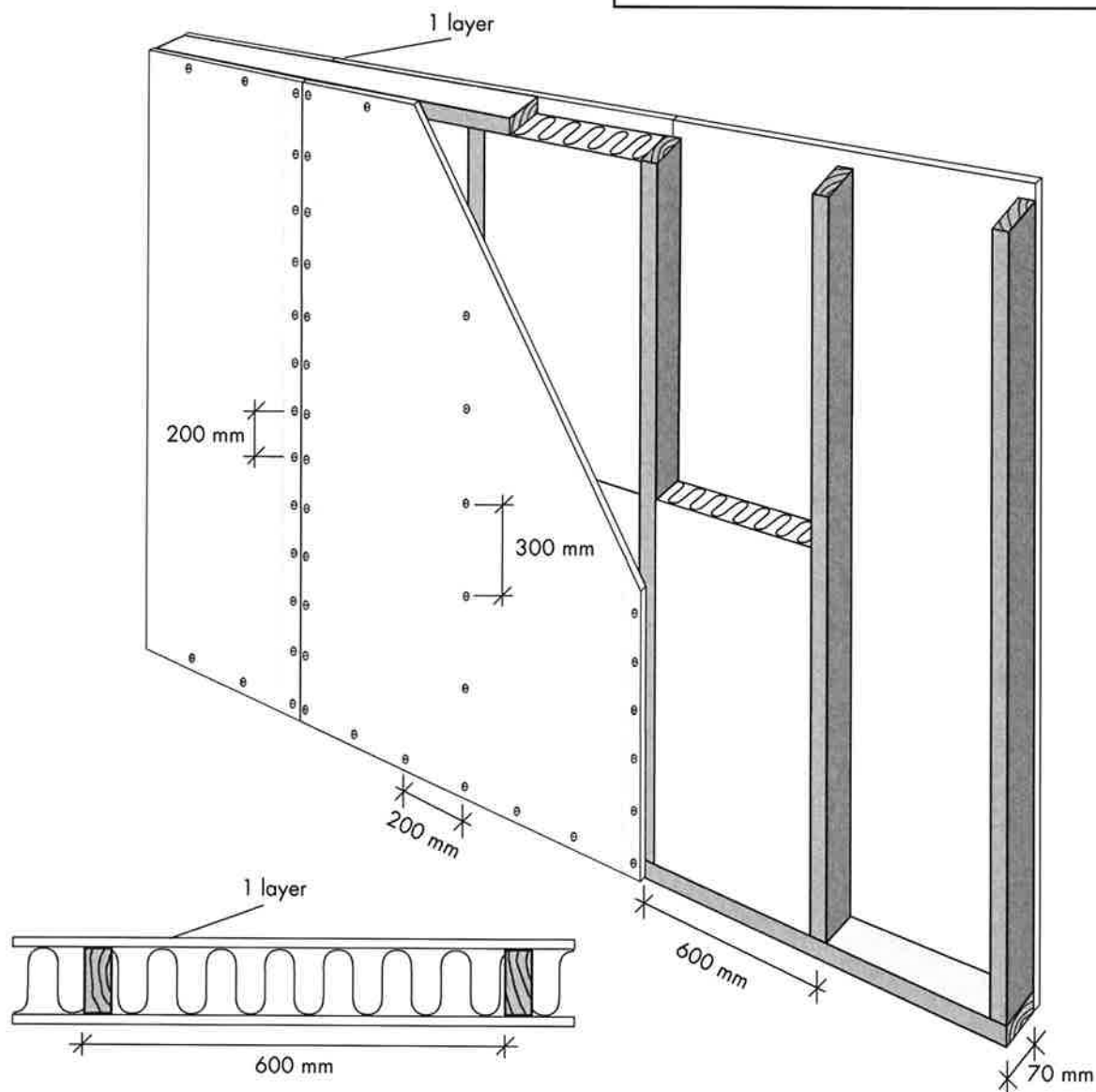
Fire class	Sound class
EI 90	$R_w = 65 \text{ dB}$ $R_w + C_{50-3150} = 61 \text{ dB}$ $R'_w = 60 \text{ dB}$ $R'_w + C_{50-3150} = 56 \text{ dB}$



# Partition 6

2006-006

- Ceiling and floor profile 70 mm
- Wooden studs 70 mm, c 600 mm
- 1 layer of gypsum board 12,5 mm on each side
- PAROC UNS 37/PAROC EXTRA 70 mm
- Gypsum screws L = 32 mm



Fire class	Sound class
EI 45 E 60	

Total wall thickness: 96 mm

