

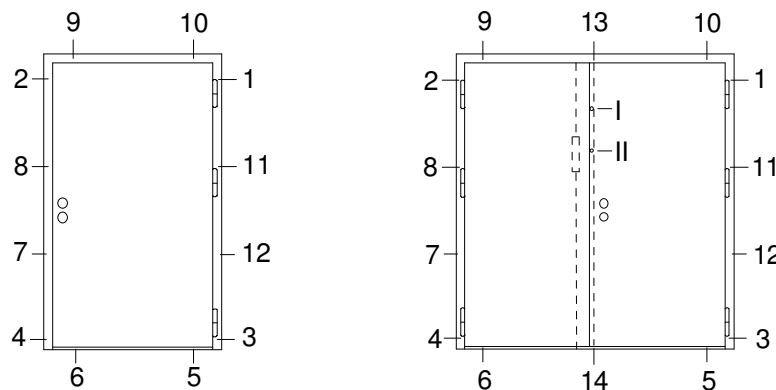
Created: SL/kal 18.11.1992	Changed: 2009-12-11 AE/KM	Checked: 2009-12-11 AE	Approved: 2009-12-11 KM
Location: Intranet & www		Replaces instruction approved: 22.1.2007 MK	

### SINGLE AND DOUBLE LEAF HINGED FIRE DOORS (EI 60 AND EI 120)

The most suitable time for installing the door is after floor concreting and wall smoothing is done, before painting of the wall surfaces.

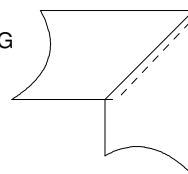
Adjust the frame fastening pieces to fit the opening in the wall and lift the frame with door up centering it into the opening horizontally. Notice that if the thickness of the floor coating. Hinge side of the frame must be leveled into wall surface to ensure the fitting of standard cover lists.

Fasten anchor screws 1 and 2 (see figure) and check that the gaps between door leaf and frame in the opening side are of the same width from top to bottom. Check that the door is vertical and fasten anchor screws 3 and 4. Test the functioning of the door and fasten anchor screws 5-12, in double doors anchor screws 5-14. Test the functioning of the door and lock. In double doors check as well that the latch is working and the secure pins I and II are on their places.



If the gap between doorframe and opening in the wall is more than 6 mm, the gap must be insulated with non-combustible (A1 or A2-s1,d0) mineral wool, e.g. with 90 x 30 mm that is bent in U-form and stuffed between doorframe and opening in the wall. However, it is recommended that the frame as well as the gap between frame and opening are insulated if the door is used as an external door. EI 120 doors are always supplied with insulated frames. Finally install the cover lists (see pic below) and cover caps. Check the lubrication of the hinges and the lock(s).

CUTTING AND INSTALLING  
THE COVER LISTS



We recommend HILTI HSA M6x65 stud anchors for frame fastening. Alternatively, if there are pre-assembled attachment plates in the opening, the frame can also be fastened by welding.



**THE WAY YOU WANT**

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**TO BE NOTED WHEN INSTALLING AND USING THE DOOR**

- Fire door has to be self-closing and self-latching. The lock has to be of such type where the bolt can't be affixed inside the lock. /Ympäristöopas 39/.
- In case the door locates on an exit route, the door has to be equipped with such a lock that is not preventing the proper usage of the door in emergency. /RakMK E1/.
- Door closers are neither required on normally closed maintenance shutters nor on apartment house doors leading to floors. /Ympäristöopas 39/.
- In case the active door leaf of double door is normally used, the door closer may be fastened only on active door leaf. Inactive door leaf must then be bolted to frame by latch. /Ympäristöopas 39/.
- In case the door has to be open continuously the door closer must be such a type that automatically closes the door in case of emergency. /RakMK E1/.
- The door closer must be such a type, which only can be adjusted or removed by using tools. /Type approval/.
- Exit doors must have a threshold. The threshold may not be higher than 20 mm in doors that lead to elevators or similar places, or doors that locate state administrative, business or service buildings. /RakMK F1/.
- The floor has to be made of non-combustible material (100 mm both sides of the door) in solutions where the normal threshold has been replaced with landing one. /Ympäristöopas 39/.
- The door must be periodically inspected and maintained according to Saajos Oy's work instruction LK75-910-004.

**THE FIRE SEALING OF EI 120 DOOR FRAME**

Painted EI 120 fire doors are always supplied with the fire sealing installed. If the door doesn't include the painting the fire sealing is delivered loose. In this case, clean the affixing areas from dirt and dust and install the fire sealing on inner side of the top frame as well as above the bolt hole and above the middle hinge (appr. 1 m/frame side).

**REMOVING PLASTIC PROTECTING FILM FROM METAL SURFACE**

A door covered with plastic protecting film, or the door including parts, which have plastic protecting film, must be stored in a warm and dry place protected from sunlight.

If the door is for external use or it is exposed to direct sunlight, the protecting film must be removed latest during the installation of the door.

Do not remove the protecting film in too warm or too cold condition; this may leave remains of glue on the surface. Recommendable surface temperature is 0...+20°C. Note that the surface temperature is affected by wind and sunlight.

The protecting film has to be removed within two months from our ex works delivery.



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## SURFACE PREPARATION

Remove all grease and dirt from the surface using appropriate methods (SFS-EN ISO 12944-4).

## PAINTING METHODS (AS AN EXAMPLE)

### Class C2, low

**Alternative 1:** Painting method TA13-AK80/2-AlZnPe, Tikkurila Coatings Oy

TEMAPRIME EE primer	1 x 40 µm
TEMALAC FD50 finish (alkyd paint)	<u>1 x 40 µm</u>
Tot.	80 µm

**Alternative 2:** Painting method TF14-AY80/2-AlZnPe, Tikkurila Coatings Oy

FONTECRYL 25 primer	1 x 40 µm
FONTECRYL 50 finish (waterborne acryl paint)	<u>1 x 40 µm</u>
Tot.	80 µm

### Class C3, medium

**Alternative 1:** Painting method TA13-AK160/3-AlZnPe, Tikkurila Coatings Oy

TEMAPRIME EE primer	2 x 60 µm
TEMALAC FD50 finish (alkyd paint)	<u>1 x 40 µm</u>
Tot.	160 µm

**Alternative 2:** Painting method TF14-AY160/3-AlZnPe, Tikkurila Coatings Oy

FONTECRYL 25 primer	2 x 60 µm
FONTECRYL 50 finish (waterborne acryl paint)	<u>1 x 40 µm</u>
Tot.	160 µm

**Alternative 3:** Painting method TP10-EPPUR100/2-AlZnPe, Tikkurila Coatings Oy

TEMACOAT GPL-S PRIMER epoxy based primer	1 x 60 µm
TEMADUR 50 polyurethane finish (epoxy polyurethane paint)	<u>1 x 40 µm</u>
Tot.	160 µm

Alternatively corresponding paints from other manufacturers can be used, see e.g. [www.teknos.fi](http://www.teknos.fi) or [www.nor-maali.fi](http://www.nor-maali.fi).

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**Table 1.** Atmospheric-corrosivity categories and examples of typical environments (SFS-EN ISO 12944-2).

Corrosivity category	Examples of typical environments in a temperate climate (informative only)	
	Exterior	Interior
C1 very low	--	Heated buildings with clean atmospheres, e.g. offices, shops, schools, hotels.
C2 low	Atmospheres with low level of pollution. Mostly rural areas.	Unheated buildings where condensation may occur, e.g. depots, sport halls.
C3 medium	Urban and industrial atmospheres, moderate sulphur dioxide pollution. Coastal areas with low salinity.	Production rooms with high humidity and some air pollution, e.g. food-processing plants, laundries, breweries, dairies.
C4 high	Industrial areas and coastal areas with moderate salinity.	Chemical plants, swimming pools, coastal ship- and boatyards.
C5-I very high (industrial)	Industrial areas with high humidity and aggressive atmosphere.	Buildings or areas with almost permanent condensation and with high pollution.
C5-M very high (marine)	Coastal and offshore areas with high salinity.	Buildings or areas with almost permanent condensation and with high pollution.

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**The following maintenance actions to be done every half-year or, when the usage of the doors is frequent, quarterly.**

1. Check the fastening of the frame to surrounding structure and the clearance between frame and door leaf.
2. Tighten the fastening screws of handles, locks, hinges and all other possible accessories.
3. Test the function of all mechanical components such as locks, latches, indication switches, door closers, etc. by opening and closing the door several times. Check and clean if necessary the corresponding holes for the latches.
4. Check the lubrication of the hinges. Re-lubricate if necessary
5. Clean and lubricate the lock(s) and all moving parts as well as the 2-point latch of a double door. After lubricating, operate the lock and possible latch a couple of times in order to get the lubricant spread properly.
6. Clean and lubricate the joints of a possible door closer. Make sure that it has a strong enough latch function (end pull) and readjust if necessary.
7. Use non-poisonous greases that have low enough solidifying point (like spray/weapon greases).
8. Check the function of possible closing selector (double doors only).
9. Check the function of magnets and release switches (doors that are kept electrically open).

## Maintenance of powder painted door surfaces

### *Materials used*

Hinged fire doors and other hinged doors have been manufactured of aluminium-zinc –coated or electro-zink –coated steel sheets. Before painting the steel sheet surfaces have been degreased. Polyester paints have been used in coating process.

### *Periodical checking of the painted door surfaces*

Usually the E60 and EI120 fire door is located indoors and environmental climate is according to SFS-EN ISO 12944-2 C1 (very mild) or C2 (mild). Under these circumstances the period for checking the surfaces is five years. . It is recommended that the checking is to be carried out annually and all mechanical damages are repaired to keep the painted surface smooth and effective. The inspection can be done visually but also methods described in ISO 4628 can be used.

### *Partial repainting*

The areas to be painted must be cleaned of dirt and dust by using suitable solvent and abrasive paper if needed (hoarseness 180). Partial repainting can be done with brush and alkyd paint (e.g. TEMALAC 90). Pay attention to the operating and safety instructions of paint manufacturer.

### *Complete repainting*

The surfaces to be painted must be cleaned of dirt and dust by using suitable cleaner and sandpaper if needed (hoarseness 180). Mechanical damages/dents must be smoothed by using suitable filler. The surfaces must be ground with abrasive paper (hoarseness 180) and the dust must be removed carefully after. Complete repainting can be done with brush or roller and with alkyd paint (e.g. TEMALAC 90). Pay attention to the operating and safety instructions of paint manufacturer.