

# HIMACS Exterior Wall Installation

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**HM2180**

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## Introduction

This section guides the fabrication and installation of HIMACS sheet facade.

## Overview

It is HIMACS unique strength of material performance to become established in the world of façade application. HIMACS is ETA and CSTB certificated. The exterior use of defined unique and special announced HIMACS Materials is applicable to the European standards and lawful European regulations and France regulations of Technical approvals. The material performance and its material characteristics have been approved by professional and independent institutes in cooperation with the highest building authority in Germany. However, each country has their own construction rules, and LX Hausys can't fully know the details. Therefore, the minimum general method to get the façade with HIMACS sheet will be addressed in this section.

## Note !

- This guideline has been created to provide technical information for successful fabrication and installation of HIMACS, and it is intended to be used in a safe environment considering their own discretion and risk by who has technical skill for fabrication and installation of HIMACS.*
- This guideline is continually revised to provide reliable and up-to-date information, replacing all previous versions of the guideline and technical information, however the usage and conditions of use are beyond LX Hausys control, LX Hausys cannot guarantee the suitability of material, fabrication and installation for all usage and conditions of use. Users should not regard or rely on this guideline as a complete, sole, up-to-date or absolute information. HIMACS users, fabricator and installer should review whether the design for HIMACS, fabrication method, installation method and required performance are suitable for the intended use and conditions of use. LX Hausys shall not be liable for any direct or indirect, commercial damages or losses caused by the fabrication and installation results of HIMACS using any or all of these guideline. In addition, the results of joining with other materials, and the fabrication and installation guidelines for other materials shall not be covered by LX Hausys.*
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**Visit our web site at [www.lxhausys.com](http://www.lxhausys.com) for the latest version of HIMACS fabrication guidelines.**

**Contact LX Hausys HIMACS territory manager or distributor of your market for specific questions and information.**

## 1. Mandatory Information

Exterior wall needs most safe construction than any other application using HIMACS sheets. Therefore, each country has their own strong rules about safety. For example,

- Wind resistance
- Weight of panel
- Thermal expansion
- Fire resistance
- Durability and UV resistance

Therefore, every fabricator and installer should carefully discuss with client and/or designer. And, there are specialist for façade construction and consultant. You can get specific help from them for your project. And, LX Hausys will serve the material information and possible technics that can be used to discuss with your client, constructor and designer. However, the responsibility of the fabrication and installation for exterior project will not be warranted by LX Hausys except the performance of HIMACS sheet itself.

Before start exterior project, please remind following minimum mandatory factors of HIMACS sheets.

- Never exceed 600mm distance between undercut anchors and/or fixing points. More long distance will make warp on panel.
- Use aluminum frame only to avoid the rust water from steel frame.
- Consider the thermal expansion of HIMACS sheets. It means the exterior wall should absorb the movement of HIMACS sheets by heat.
- Always use the frames and anchors that guaranteed the performance by supplier, or having reports by reliable institute.

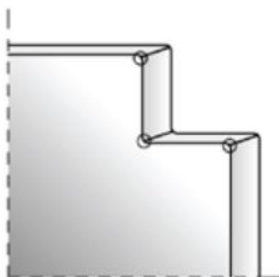
From the fixing items to the wall up to the fittings of the HI-MCS façade pales using qualified and approved products only will serve the best quality and its best material performance to a successful façade application. Refer to 'HM2021 HI-MSCS® sheet Information' to find suitable HI-MSCS® sheets for exterior use.

## 2. Fabrication Details

### 2-1. Cut offs

- Cuts to size can be done via CNC router, table circular saw or wall panel saw, beam saws.
- For hand saw machines it is a must to re-sand the whole edge and to be smoothen afterwards.
- Cut outs in panels are only necessary to do with routers only.
- Never leave any sharp corner neither any sharp edge at anytime and anywhere on the HIMACS facade panel.

**Fig. 2-1. Corner treatment**



### 2-2. Edges

- All0 edges supposed to have a radius of minimum  $R=1,5\text{mm}$ .
- Do not leave any sharp edges under all circumstances if later visible or not.

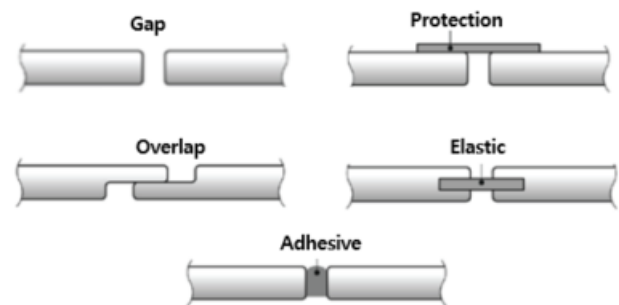
**Fig. 2-2. Edge trimming**



### 2-3. Seam design

- Seams between different panels of HIMACS can be structured or designed in different ways.
- To allow optimal dilatation of each panel we strongly recommend a shadow line of 8 to 10 mm between each single facade panel.
- But also other seam design can be chosen. All0 edges supposed to have a radius of minimum  $R=1,5\text{mm}$ .
- Open seam with or without backside protection.
- Seam overlapping direct trimmed to HIMACS façade panel or with HIMACS feather.
- Closed seam with permanent elastic and weather resistance adhesive.

**Fig. 2-3. Seam design**

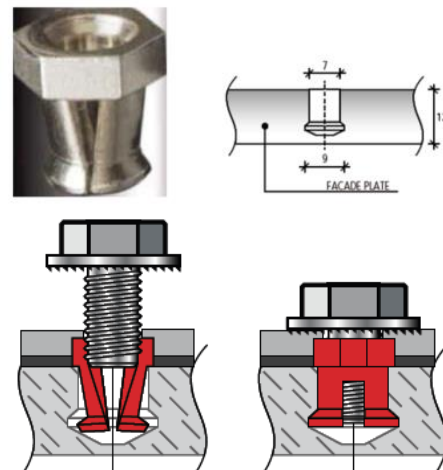


## 3. Fixing Details

### 3-1. Invisible fixing

LX Hausys recommends fixing HIMACS façade panels with Keil undercut anchor that has been approved through ETA/CSTB certification for facade..

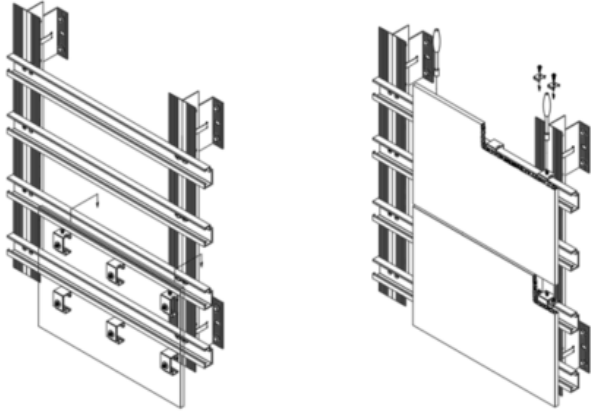
**Fig. 3-1. Keil undercut anchor**



### 3-2. Aluminum frame

LX Hausys strongly recommends using only high quality and approved fixing systems like BWM products. The HIMACS facade panels have to be installed with a minimum of 20 mm air gap behind the panels to ensure that air will circulate from the backside of the panel. Insulation sheets have to be placed between the aluminum profiles of the sub-construction. These profiles are placed according to the architect's advice, after calculation of the building's requirements.

**Fig. 3-2. BWM aluminum frame**



### Useful Tip!

Visit our web site at [www.lxhausys.com](http://www.lxhausys.com) for the all drawings and certifications for façade.

### 4. Sheet specifications for facade

HIMACS FR / S728 Specifications	Result	Unit
sheet thickness	12	mm
dead load	17.5	kg/m <sup>2</sup>
depth of fixation of Keil undercut anchor	8.5	mm
allowable bending stress	55	N/mm <sup>2</sup>
flexural E-modulus	8500	N/mm <sup>2</sup>
thermal expansion coefficient	4.5x10 <sup>-6</sup>	m/°C
allowable center traction per anchor	500	N
allowable center cross traction per anchor	800	N
minimum distance to edge of anchor	100	mm
minimum axial distance of anchor	100	mm

This is average values of S728 sheet. If you need latest information contact your sales manager and get a technical help.

### Referenced documents

'HM2021 HIMACS Sheet Information'

ETA certification

CSTB certification

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