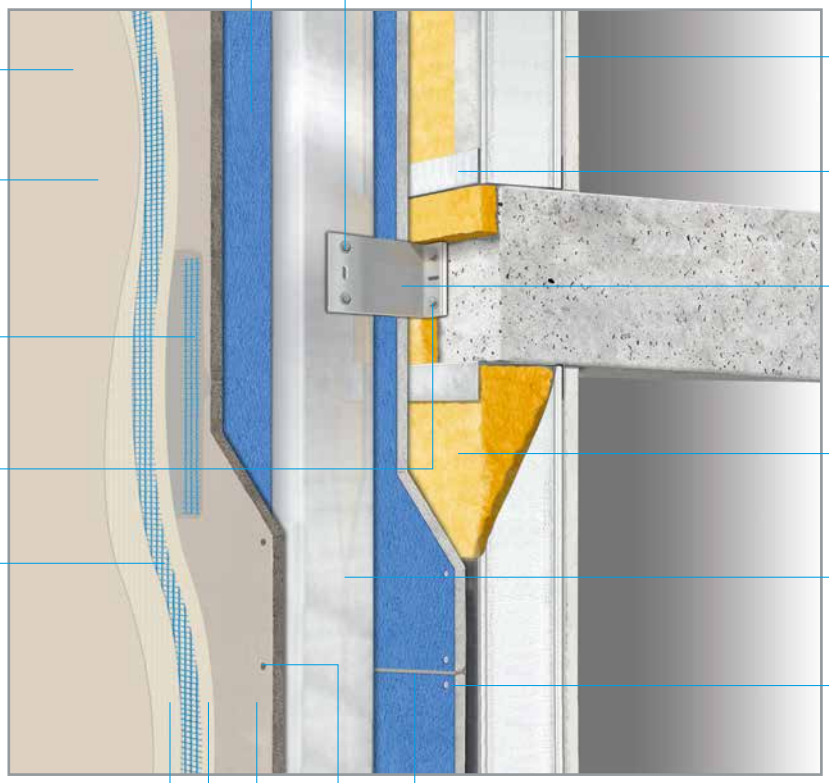
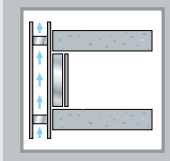
[GUARD]EX® Ventilated Façade System*

Guardex® Ventilated Façade System is installed after finishing the load bearing construction.



* Guardex® is only recommended to be applied with systems as described in this brochure.

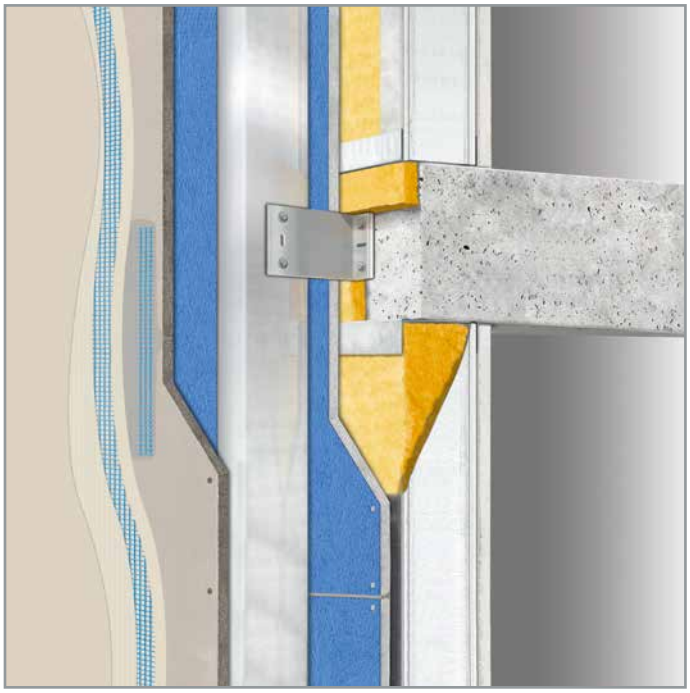
Guardex® Ventilated Façade System



Guardex® Ventilated Façade System is constructed with metal substructure fixed on the load bearing construction of the building and mineral wool between the studs for providing the thermal and sound insulation requirements. The substructure is cladded with gypsum board from inside and with Guardex® from outside which stays behind the exterior cladding. This system is very popular for rehabilitation of the buildings because of fast, easy and effective application.

Important note: If the last cladding of the façade has open gaps and joints which allows the sheating board to be exposed to outer weather conditions permanently, it is highly recommended to use **Aquapanel® Cement Board Outdoor Climateshield** as the sheating board.

If you have different requirement please contact Knauf Turkey Technical Department via Hotline. Depending on climate and other conditions you can make the decision case by case.



Ventilated Façade with Aquapanel®

Ventilated Façade with aluminium cladding

Ventilated Façade with glass cladding

Ventilated Façade with stone cladding

Comfortable spaces

Guardex® offers esthetic and modern ventilated façade systems which is rainproof and fulfills thermal parameters for comfortable living spaces.

Outer skin to protect the building

Guardex® Ventilated Façade Systems protect the building from weather conditions such as wind, rain, condensation etc. for 12 months by covering the building like a outer skin. Therefore, the insulation materials keep its performance for thermal insulation, sound insulation and fire resistance for a longer time. In case Guardex® Ventilated Façade System is exposed to permanent weather conditions because of big gaps in the joints of finisihing cladding, it is recommended to use Aquapanel® Cement Board Outdoor Climateshield instead of Guardex®.

Long-term construction

Guardex® Ventilated Façade Systems play a major role to build living spaces with healthy air quality and to drain the water caused by condensation by means of 2-layer structure and air circulation in between.

Fast, easy installation and low cost

Guardex® Ventilated Façade Systems decrease the total cost of the building due to fast and easy installation.

High thermal resistance

Guardex® Ventilated Façade Systems offer a improved thermal resistance coefficient R(1/Λ) upto 2,83 m_2K/w at the exisiting walls. Mineral wool thickness can be increased for providing more thermal resistance. For any other thermal calculations not mentioned in the tables above, please get in touch with the Knauf Turkey Technical Department via Hotline.

Big advantage in comparison with others systems

Guardex® Ventilated Façade Systems which is constructed with the products regarding the standards and claddings like glass, aluminium, stone, timber, cement based boards etc. mounted on the own substructure offer big advantages in comparison with the conventional massive walls as below;

- The system can be installed any time of the year, it is not an obligation to for adequate weather conditions.
- Sustainable buildings, comfortable air quality and microclimate living spaces can be designed in all weather conditions due to vapour diffusion property of the system.
- Guardex® Ventilated Façade Systems are almost rainproof and drain the water caused by condensation.
- Guardex® Ventilated Façade Systems offer modern solutions regarding energy saving criterias.
- Guardex® Ventilated Façade Systems offer several cladding alternatives such as glass, ceramic, stone, timber, cement based boards etc. Curved façades can be also designed.
- Guardex® Ventilated Façade Systems are long term constructions and can resist weather conditions such as wind,rain,snow, UV rays etc.
- Thermal insulation system keeps its performance for a long time because Guardex® Ventilated Systems protect the building and insulation materials and have good vapour difusion values.
- Guardex® Ventilated Systems can be repaired more easily than the conventional wall systems.
- Guardex® Ventilated Systems can dissipate seismic loads.

Profiles used in Guardex® Ventilated Systems should be manufactured from min. Z275 gr/m^2 zinc coated steel sheet.

In Guardex® Ventilated Façade Systems, C Profiles with width of 50, 75, 100, 125 or 150 mm can be used according to the wind load. The thickness of the profiles vary depending on the wind load and stud spacings as 0.60, 0.70, 0.80, 0.90, 1.0 ve 2 mm. Stud spacings must be max. 60 cm.

Thermal insulation with [GUARD]**EX**® Ventilated Façade System

Profile			Claddings		Insulation material	Wall*		
Type	Thickness mm	Spacing cm	Exterior side	Interior side	MW ** inside studs cm	Weight kg/m²	Thickness cm	UD value W/m²K
DC 50	0,60	60	Guardex® 12,5 mm + Cladding board	Gypsum board 2x12,5 mm	5	~ 43	12,5	0,72
DC 75					7,5		17,25	0,56
DC 100					10		19,75	0,46
DC 125					10		22,25	0,45
DC 125					12,5		22,25	0,40
DC 150					10		24,75	0,45
DC 150					15		24,75	0,35

Instructions:

1. Profiles are made of DX51D type steels according to TS EN 10346 with density 0.0071 kg/m³ and produced in compliance with TS EN 14195. The flanges of the profiles are point perforated and manufactured from min. Z275 zinc coated steel sheet in compliance with TS EN 10346.
2. The thermal bridges caused by the profiles are calculated as the studs are applied with 60 cm spacings.
3. Ventilation (air flow) from below and above between Guardex® and the finishing cladding should be allowed.
4. The finishing cladding should be fixed and carried to the main structure of the building.

* The finishing caldding of the ventilated system is not included to the calculations

** Thermal conductivity of Knauf Insulation IPB 37 mineral wool (λ) = 0,037

Recommended wall heights for [GUARD]**EX**® Ventilated Façade System (without wind loads)

For single and double layer gypsum board applications

Profile			Wall heights m
Type	Thickness mm	Spacing cm	
DC 50	0,60	60	3,20
		40	3,85
		30	4,00
DC 75	0,60	60	4,00
		40	4,35
		30	4,85
DC 100	0,60	60	5,10
		40	5,95
		30	6,55
DC 125	0,60	60	6,65
		40	7,60
		30	8,30
DC 150	0,60	60	8,20
		40	9,15
		30	9,80

Guardex® ventilation façade systems are applied with an additional finishing cladding such as Aquapanel®, glass,stone aluminium etc. which it is recommended that the substructure of the finishing cladding is fixed on the main structure of the building. For that reason, the substructure of the finishing cladding is supposed to withstand the wind loads. However, if Guardex® boards are applied before the finishing cladding is completed and will face any wind loads; then the recommended wall heights for "Guardex® Exterior Drywall Systems with ETICS" should be taken in to consideration. Only if the façade is protected against any wind load before and during Guardex® applications, then the below mentioned recommended wall heights are adequate to use.