WALL APPLICATIONS

STEICO*wall* is a slender, efficient building element for wall constructions that demand a high level of both energy efficiency and strength. Using pre-insulated STEICO*wall* studs facilitates easy insulation of the structure and thereby contributes to overall cost savings.

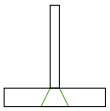
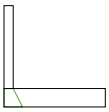
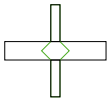
CHARACTERISTIC AXIAL COMPRESSION LOADS FOR STEICO*wall* TO EC 5

Type	Flange b*h [mm]	With one side only sheathed[a)] N_k [kN]	With both sides sheathed[a)] N_k [kN]
STEICO*wall* SW 45	45*45	6.1	55.5
STEICO*wall* SW 60	60*45	14.2	74.9
STEICO*wall* SW 90	90*45	45.0	124.9

Note: The above tables are based on a wall panel height of 2,5 m.

Sheathing to the requirements of BS 5268 to provide lateral restraint to the flanges and it is recommended that in all construction this is provided to both sides of the stud. Where the studs are part of a system offering lateral restraint to a structure, a minimum of 1 layer of category 1 or 2 sheathing must be provided. Where wind reversal occurs, both faces must be sheathed to prevent buckling.

CHARACTERISTIC LOAD ON THE SUPPORT ACCORDING TO EC 5 FOR SOLID TIMBER C 16, C 24 AND GLULAM GL 28[b)]

Type	Flange b * h [mm]									
		Characteristic load per stud in kN[a)]								
		C 16	C 24	GL 28	C 16	C 24	GL 28	C 16	C 24	GL 28
STEICO*wall* SW 45	45 * 45	25.1	28.5	30.8	22.5	25.6	27.6	22.5	25.6	27.6
STEICO*wall* SW 60	60 * 45	30.9	35.1	37.9	28.3	32.2	34.7	28.3	32.2	34.7
STEICO*wall* SW 90	90 * 45	41.3	47.0	50.7	38.8	44.0	47.6	38.8	44.0	47.6

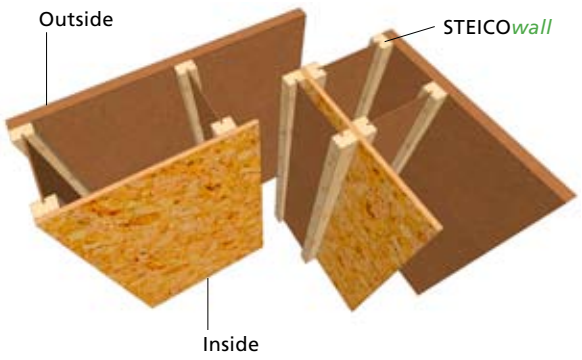
a) The design values have to be calculated in the following way:
$N_d = N_k * k_{mod} / \gamma_m$ where: N_k ≙ tabular value, k_{mod} ≙ modification factor,
γ_m ≙ partial factor for material properties
b) For sole plate / top plate of 43 mm height

Calculation Assumptions:

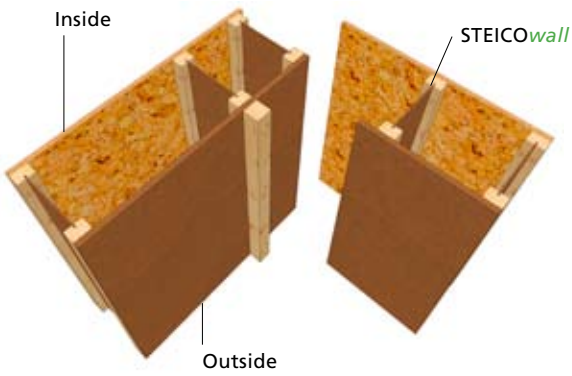
- Load discharge takes place in the middle of the joist
- Even load distribution on both flanges

WALL CONSTRUCTION DETAILS

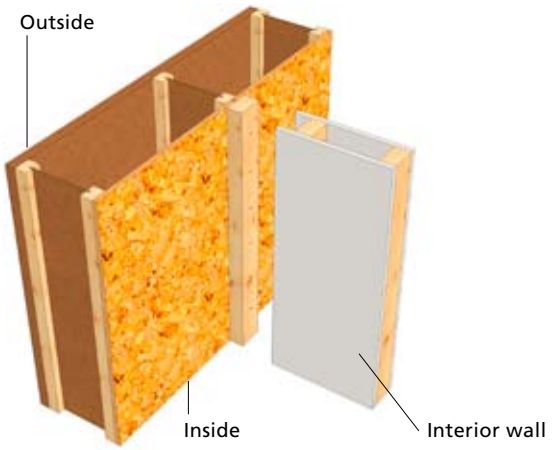
W1 Internal corner detail



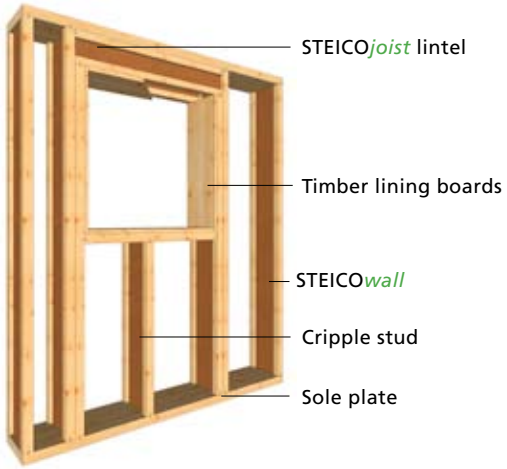
W2 External corner



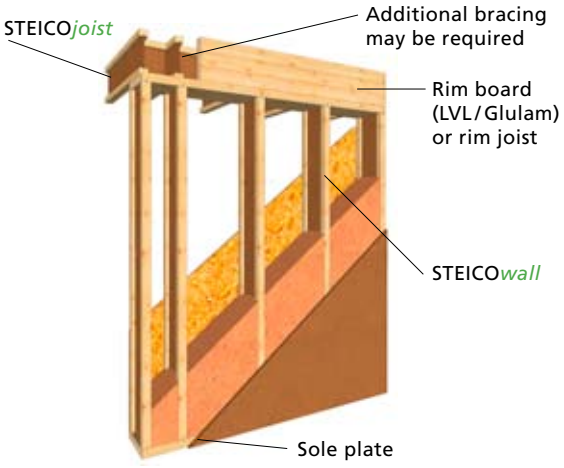
W3 External wall to partition



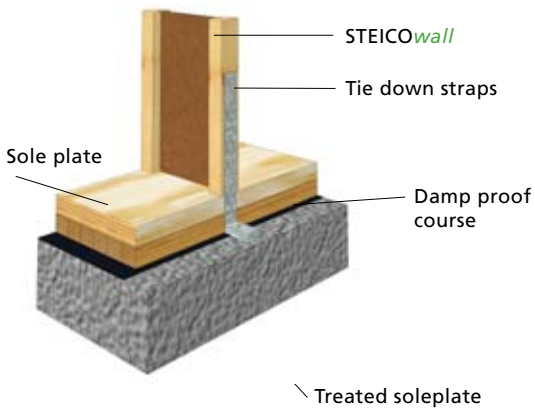
W4 Window opening



W5 Exterior wall and floor connection



W6 Connection to concrete floor



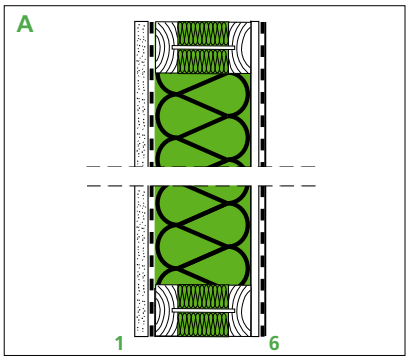
THERMAL INSULATION

With its I-section profile, the STEICO*wall* is ideally suited for wall constructions with high thermal requirements. Low energy buildings may be efficiently constructed.

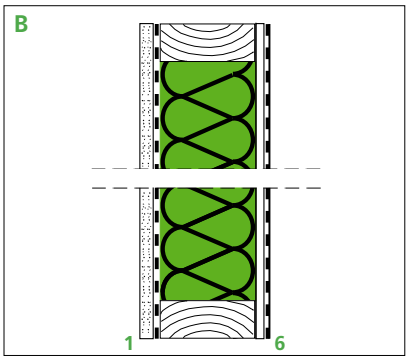
The factory-made flange filler insulation and bespoke insulation widths of the STEICO*wall* allow energy efficient design and the easy installation of the STEICO flexible insulation products.

WALL CONSTRUCTIONS

STEICO*wall*



Solid timber stud



1 Plasterboard 12.5 mm
2 Vapour barrier
3 A STEICO*wall* 45/160
  B Solid stud 38/140
4 A STEICOflex 160 mm
  B Mineral wool 140 mm
5 OSB 9 mm
6 Breather paper

Thermal performance

Version	Overall U-Value	Phase shift
Construction A	0.238	8.3
Construction B	0.284	5.6

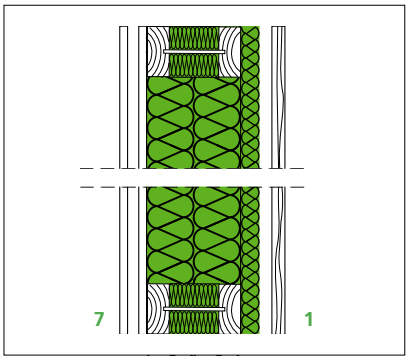
FIRE PROTECTION

STEICO products are suitable for use in wall constructions requiring fire protection. Wood and wood based products in conjunction with fire resistant materials provide positive fire protection properties with a measurable char rating.

Wall construction F 30-B
According to the general building code test certificate "AbP P-SAC 02/ III–201" from STEICO AG.

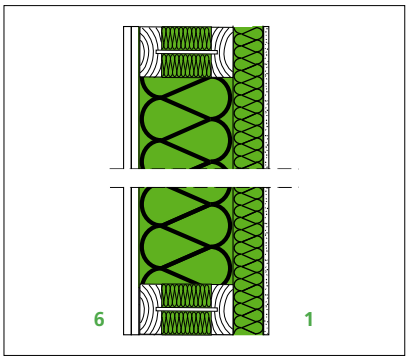
A) Wall construction with timber cladding

Timber cladding d ≥ 20 mm	1
Battens and cross battens ≥ 50 mm	2
STEICO*universal* 35 or 52 mm	3
STEICO*wall* 160-360	
Stud centers 400 - 600 mm	4
STEICO*flex* ≥ 160 mm	5
Wood based panel ≥ 15 mm	6
Plasterboard 12.5 mm	7



B) Wall construction with rendered finish

Render system d ≥ 4 mm	1
STEICO*protect* render board d ≥ 40 mm	2
STEICO*wall* 160-360	3
Stud centers 400 - 600 mm	
STEICO*flex* ≥ 160 mm	4
Wood based panel ≥ 15 mm	5
Fermacell gypsumboard d ≥ 15 mm	6



Additional construction alternatives are possible. Please contact your STEICO partner for more information.