

# FRAMEAI - FABRICATION DRAWING

Single-Bay Portal Frame — Demo Structure

MARK	PROFILE	SEC CLASS	LENGTH (mm)	MASS (kg)	LOCATION
B01	HEB 240	Class 1	5500	4577	Left column
B02	HEB 240	Class 1	5500	4577	Right column
R01	IPE 360	Class 1	7020	4008	Left rafter
R02	IPE 360	Class 1	7020	4008	Right rafter
RC01	RC 250x500	Class -	4200	263	Ground floor beam

## SUMMARY

Total Members: 5

Total Mass: 17.2 t

Profiles: HEB 240, IPE 360

## REV A

Drawn: FrameAI

05/06/2026

SCALE: NTS

# MEMBER: B01 - HEB 240

Left column | Length: 5500 mm | Class 1

## MEMBER DATA

Mark: B01

Profile: HEB 240

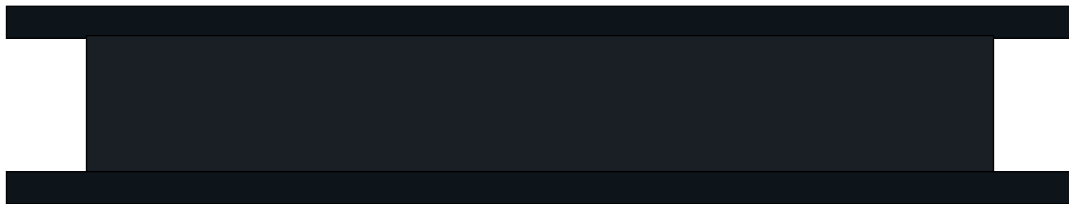
Length: 5500 mm

Mass: 4577 kg

Section Class: 1

Location: Left column

## HEB 240 - Section Class 1 (EN 1993-1-1)



5500 mm

# MEMBER: B02 - HEB 240

Right column | Length: 5500 mm | Class 1

## MEMBER DATA

Mark: B02

Profile: HEB 240

Length: 5500 mm

Mass: 4577 kg

Section Class: 1

Location: Right column

## HEB 240 - Section Class 1 (EN 1993-1-1)



5500 mm

# MEMBER: R01 - IPE 360

Left rafter | Length: 7020 mm | Class 1

## MEMBER DATA

Mark: R01

Profile: IPE 360

Length: 7020 mm

Mass: 4008 kg

Section Class: 1

Location: Left rafter

## IPE 360 - Section Class 1 (EN 1993-1-1)



7020 mm

# MEMBER: R02 - IPE 360

Right rafter | Length: 7020 mm | Class 1

## MEMBER DATA

Mark: R02

Profile: IPE 360

Length: 7020 mm

Mass: 4008 kg

Section Class: 1

Location: Right rafter

## IPE 360 - Section Class 1 (EN 1993-1-1)



7020 mm

# MEMBER: RC01 - RC 250x500

Ground floor beam | Length: 4200 mm | Class -

## MEMBER DATA

Mark: RC01

Profile: RC 250x500

Length: 4200 mm

Mass: 263 kg

Section Class: -

Location: Ground floor beam

## RC 250x500 - Section Class - (EN 1993-1-1)



4200 mm

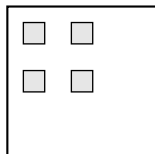
# CONNECTION DETAILS - EN 1993-1-8

Bolted connection schedule with utilisation checks (gM2 = 1.25)

MARK	TYPE	CONN.	BOLT SPEC	PLATE	GOV. CHECK	UTIL.
C01	end plate	M	4× M20 gr.8.8	10mm S275	shear	16%
C02	end plate	M	4× M20 gr.8.8	10mm S275	shear	16%
C03	end plate	P	2× M20 gr.8.8	8mm S275	bearing	17%

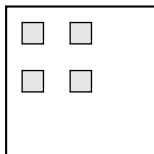
## CONNECTION DETAIL SKETCHES

C01



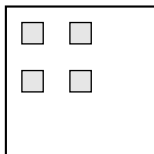
M20 gr.8.8

C02



M20 gr.8.8

C03



M20 gr.8.8

### UTILISATION LEGEND:

■ < 85% (OK)

■ 85-100% (Marginal)

■ > 100% (FAIL)

Ref: EN 1993-1-8:2005 §3, gM2 = 1.25

# WELD DETAILS - EN 1993-1-8 §4 / ISO 2553

Fillet weld schedule - directional & simplified methods (gM2 = 1.25)

MARK	TYPE	WELD SPEC	THROAT (mm)	L_eff (mm)	METHOD	UTIL.	STATUS
W01	baseplate	a=6mm S275 L=150mm	a=6	138	simplified	16%	OK
W02	baseplate	a=6mm S275 L=150mm	a=6	138	simplified	16%	OK
W03	end plate haunch	a=8mm S355 L=300mm	a=8	284	directional	30%	OK

## ISO 2553 WELD SYMBOLS (schematic)

### Fillet V

a=6

Fillet weld - arrow side

### Fillet Λ

a=6

Fillet weld - other side

### Baseplate

a=8

All-round fillet (O flag)

### Haunch

End-plate haunch weld

**REFERENCES:** EN 1993-1-8:2005 §4.5.3.2 eq.4.1 (directional) | §4.5.3.3 eq.4.4 (simplified) | bw per Table 4.1 | gM2 = 1.25

Symbols per ISO 2553:2019. Throat  $\geq 3\text{mm}$ ,  $\leq 0.7 \times t_{\text{min}}$  (§4.5.2).

**[OK] Welds verified per EN 1993-1-8 §4 -- all welds PASS**

# RC BEAM BENDING - EN 1992-1-1 §6.1

Singly-reinforced rectangular beam design (rectangular stress block, §3.1.7)

MARK	b <sub>xh</sub> (mm)	f <sub>ck</sub> / f <sub>yk</sub>	M <sub>Ed</sub> (kNm)	A <sub>s,req</sub> (mm <sup>2</sup> )	x/d	M <sub>Rd</sub> (kNm)	UTIL.	GOVERNS
RC01	250x500	C30/B500	-	1799	0.511	280	100%	ductility limit ex

[!] x/d = 0.511 > x<sub>lim</sub>(0.45) - compression reinforcement required for ductility

## EN 1992-1-1:2004 §6.1 - rectangular stress block (§3.1.7)

A<sub>s,min</sub> per §9.2.1.1 | x<sub>lim</sub> = 0.45 (f<sub>ck</sub> ≤ 50) / 0.35 (f<sub>ck</sub> > 50) | g<sub>c</sub> = 1.5, g<sub>s</sub> = 1.15, acc = 0.85