

Steelwork Specifications/

Balcony component specifications



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4. Building component specifications

The building component-ID, title for the building component specifications

Each building component comprises the following points:

- Scope and location
- Reference to drawings
- Adjacent and adjoining components
- Design
- Materials and products
- Execution of works
- Surfaces
- Samples
- Control
- The work environment

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2. Scope

The scope of the refurbishment of the Multi storey building on Moldevej 29-39 in Vejle is:

- to merge smaller apartments into bigger ones
- erect new floor with the penthouse,
- establish of the new facade with new balconies at the south,
- provide new access staircases

It is important to bring the building into the modern standard, complying with Building Regulations.

To do so the following works need to be done:

- Steel structure consisting of beams and columns at the facade supporting slabs and replacing loadbearing external and internal walls which needs to be demolished
- Steel structure for the balconies, connected with the superstructure of the facade
- Steel structure of the penthouse
- Steel perforated sunscreen at the facade

2.1. General information

The work comprises the building components and other services stated in point 2.2, which are described in more detail in the work specifications or in the drawings.

In addition, the work comprises the stipulations in the Case Specifications and any services required in tender forms, for example extra work or omissions that can be connected to the current works.

2.2. Building components

The work comprises all works and deliveries that are necessary for the full completion of building components.

The work encompasses the following building components:

- HE220 beams and columns (steel structure at the facade)
- HE280 beams (balcony structure)
- UPE 280 beams and columns (balcony structure)
- IPE 160 beams (balcony structure)
- Tie rod system 42Ø(balcony structure)
- 70mm SHS columns(penthouse structure)
- HE140 beams (penthouse structure)
- HE100 beams(sunscreen system)
- Steel rod 10Ø (sunscreen system)
- 3mm steel aluminium perforated panel(sunscreen system)
- Handrail

The following components, delivered by the employer/other contractor, are mounted as part of the current works:

- Anchor bolts
- Masonry

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2.3. Design and detail design

No design work should be done by the contractor.

2.4. The building site

See case specification chapter 4 drawing no. AN-X3(2ET) 001

2.5 Health and Safety

See case specification chapter 4 and 5

2.6 The surrounding environment

See case specifications chapter 5

2.7. Quality Assurance

2.7.1. General information

See case specification chapter 7

2.7.2. Documentation of quality

- See case specification chapter 7
- See tender control plan

2.7.3. O&M (Operation and Maintenance)-documentation

The following documentation for the work's quality must be delivered to TEAM Architectural office:

- Certificates of the steelwork quality and standards
- Documentation for welding quality
- Documentation for material quality
- Documentation for each component produced measure, control and quantity of the components
- Documentation for galvanizing quality
- Maintainers plans for balconies

2.8. Planning and scheduling of work

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Contractor must cooperate with other contractors.

Documents

All work documents must be delivered for the project management's scrutiny on request. The work documents, which the contractor must prepare in accordance with his services, will be commented upon within 1 workdays for its reception.

Mounting plan must be delivered to the project leader 7 days before mounting.

2.9. Samples

No required samples

3. General Specifications

3.1. Reference

- Teknisk Ståbi 18th edition
- Steel detailers' manual
- Guide steel connections

3.1.1. Norms and standards

The norms and standards mentioned below, in their latest editions and with any enclosures are valid for the works - with any amendments, additions and omissions that are stated in these work specifications and on the drawings.

The notes and directions, etc. stated in the references are to be construed as requirements that only can be deviated from if they are stated in these work specifications and/or on the drawings, or agreed with the project management.

- Building regulations 2008
- DS 412 Code of practice for steel construction
- DS 409 Code of practice for load combination
- DS 410 Code of practice for loads for the design

3.1.2. Directions/instructions

Where the directions, reports and other documents in their latest edition, with any enclosures and together with the project documents, are made valid for the works, the stated recommendations, directions, procedures, advice, etc. must be construed as demands.

3.2 Materials and products

The required documentation for the materials and products used, for example in the form of product certificates, receipts, etc., must be presented for the project management for their approval.

The following materials and products must not be delivered onto the building site before the project management's documentation for them is available:

- Bolts and Nuts, 20mm.M20 quality 8.8
- HEB220 beams with welded plates corrosion class C2, steel quality S355
- HEB220 columns corrosion class C2, steel quality S355
- HE280 beams

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- UPE 280 beams and columns
- IPE 160 beams
- Tie rod system 42Ø
- 70mm SHS columns
- HE140 beams
- HE100 beams
- Steel rod 10Ø
- 3mm steel aluminium perforated panel
- Carbon steel bearing plates
- Washers, 0 22mm x 2mm
- Black steel bolts and nuts and washers
- IPE Corrosion protected with paint
- Handrail corrosion protected

Materials and products of specific brands can be prescribed for the works. Other product brands can be used if they are on the same footing as the ones prescribed. Documentation for this must be presented to the project management.

3.3 Execution of works

Demands for executing the work must follow the given standards
see 3.1.1.

3.4. Control

The following Tender Control Plan must be worked into the contractor's Control Plan.

If faults or mistakes are found in the inspections that have been executed within a control section the contractor must rectify that in the time limit given by project manager.

And inspection brought up to 100%.

Method:

- visual control
- measuring
- testing
- control and documentation

Extend and time:

See tender control plan

- material production
- instalment

Documentation

All documents concerning the control must be filled out and handed out signed to the building site manager.

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3.5 Relation to other works

- Height on walls and fix point must be checked see Tender control plan
- If something is like it shouldn't be, the building site manager must be notified e.g. Wrong height on walls and the fix point

3.6. Work environment

See case specifications chapter 4 and 5.

4. Building Component Specifications

- **Building Component ID, the title for the building component specifications**

(26) Balcony structure – we can number balconies as a structure according to the primary element sfb coding number, floor number and no. of the balcony as follows:

Primary element SFB /Balcony	Floor number	Balcony no.
(26)	1	1...,2...,3...,4...,5...,6
(26)	2	1...,2...,3...,4...,5...,6
(26)	3	1...,2...,3...,4...,5...,6
(26)	4	1...,2...,3...,4...,5...,6

Separate elements in the structure of the balcony we can divide as following:

Type/primary elements/ balcony	Nr. Of the balcony(each floor 6 balconies)	Dimension	Element	Floor number	Phase
(26)	1,2,3,4,5,6	HE280	B (Beam)	1or2or3or4	1or2or3
(26)	1,2,3,4,5,6	UPE 280	B/C(columns)	1 or 2 or 3 or 4	1 or 2 or 3
(26)	1,2,3,4,5,6	IPE 160	B	1 or 2 or 3 or 4	1 or 2 or 3
(26)	1,2,3,4,5,6	Tie rod system 42Ø	B	1 or 2 or 3 or 4	1 or 2 or 3
(26)	1,2,3,4,5,6	80 mm/Loadbearing thermally insulated steel connection	L (loadbearing connection)	1 or 2 or 3 or 4	1 or 2 or 3 or 4
(26)	1,2,3,4,5,6	230/Loadbearing plates 230x350mm	BP	1 or 2 or 3 or 4	1 or 2 or 3 or 4
(36)	1,2,3,4,5,6	48	R(railing)	1 or 2 or 3 or 4	1 or 2 or 3

For example (26) HE280B 1 1 - Balcony beam HE280 located at the 1st floor and constructed in the phase 1

- **Extent and location**

The work includes all works and deliveries that are necessary for the total completion of the structural frame of the balcony, including:

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1. Delivery and mounting - framed steel construction of the slab and balcony roof to the steel frame in the façade:
 - HE280
 - UPE 280
 - IPE 160
2. Delivery and mounting - tie rod system to the steel structure in the facade
3. Delivery and mounting – loadbearing thermally insulated steel connection
4. Delivery and mounting – loadbearing plates
5. Delivery and mounting – railing

Location

Balcony number	Drawing no.	Modular lines
(26) 1.1	1 st floor plan	Between 1-6
(26) 1.2	1 st floor plan	Between 7-12
(26) 2.1	2 nd floor plan	Between 1-5
(26) 2.1	2 nd floor plan	Between 8-13
(26) 3.1	3 rd floor plan	Between 1-6
(26) 3.2	3 rd floor plan	Between 7-12
(26) 4.1	4 th floor plan	Between 1-6
(26) 4.2	4 th floor plan	Between 8-13

- **References to drawings**

- 1st floor plan
- 2nd floor plan
- 3rd floor plan
- 4th floor plan
- Section drawing
- Facade drawing
- Detail drawings

- **Adjoining building components**

- Steel structure at the façade must be erected before by the Steel workers before welding balconies- steel trade
- Steel profiles must be leveled according to the height shown on the drawing **steel structure at the facade**
- Mounting of the wall panels and insulation in the close connection with the balcony structure by Light steel contractors should be placed after steel structure of the balcony will be fixed to the beam in the façade. However wall studs can be mounted in the same time - Light steel trade
- All the completion works in the balcony has to be made after all the final verifications of the steel structure will be checked and approved by the steel contractor.

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Completion work of the balcony includes:

- Installation of the gutter, pipe system and provision of the sufficient slope
- Decking, waterproofing along the gutter , window and in the connection with the wall
- Fixing cladding at the structure

All the completion of the work should be executed by the Carpentry trade contractor.

- Covering for the walls in the close surrounding to the balcony should be made after placing rain water downpipe and gutter system for the balcony – Light steel trade
- Window mounting should be made after balcony steel structure execution - Carpentry

- **Design**

See to 2.3

- **Materials and products**

- HE A-PROFILE nr.280/dimensions 270x280x13mm/ standard length 12,10,14m/
 - Euro norm 53, 1962
- UPE PROFILE nr.270 /dimensions 270x95x14mm/standard length 12,15m/
 - Euro norm 24, 1962
- IPE-PROFILE nr.160/ dimensions 160x82x7,4mm/standard length 10, 12, 14m/
 - Euro norm 19,1957
- Stainless Steel tie rod system 42Ø certification according to DIN EN ISO 9001:2000
- Loadbearing thermally insulated steel to steel/steel to concrete connection according to Euro codes 2, 3
- Bearing plates s355 230x350mm

- **Execution**

Demands for the execution of the work as stated in point 3.3. *Execution of Works*.

- **Surfaces**

Demands to surfaces- with reference to specifications in chapter 3

- **Tests and samples**

See subsection 2.9

- **Quality Control**

See sub section 3.4

- **Work Environment**

See subsection 3.6