ATOM STEEL

MASTER CATALOGUE 2026



STEEL POLES · MASTS · MONOPOLES

# STEEL POLES, HIGH MASTS & MONOPOLES

| | |
|---|---|
| ● STANDARD RANGE | Round conical and octagonal street lighting poles |
| ● PROJECT-ENGINEERED | High masts and stadium masts · floodlight, camera and special poles |
| ● DEVELOPMENT PROGRAMME | Telecom and power transmission monopoles |

Poles and masts cut, formed and welded in our own plant in Kočani, North Macedonia.

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**EN 1090-1 · EXC3 | EN ISO 3834-2 | ISO 9001 · 14001 · 45001**

Fabrication in accordance with EN 1090-2, Execution Class EXC3, under certified Factory Production Control according to EN 1090-1 and welding quality requirements according to EN ISO 3834-2.

ATOM POLES

PRODUCT BRAND OF ATOM STEEL




ONE PLANT · KOČANI, NORTH MACEDONIA

# FROM THE PLATE TO THE FINISHED POLE

Cutting, press forming, welding, inspection and loading under one roof and one certified quality system.

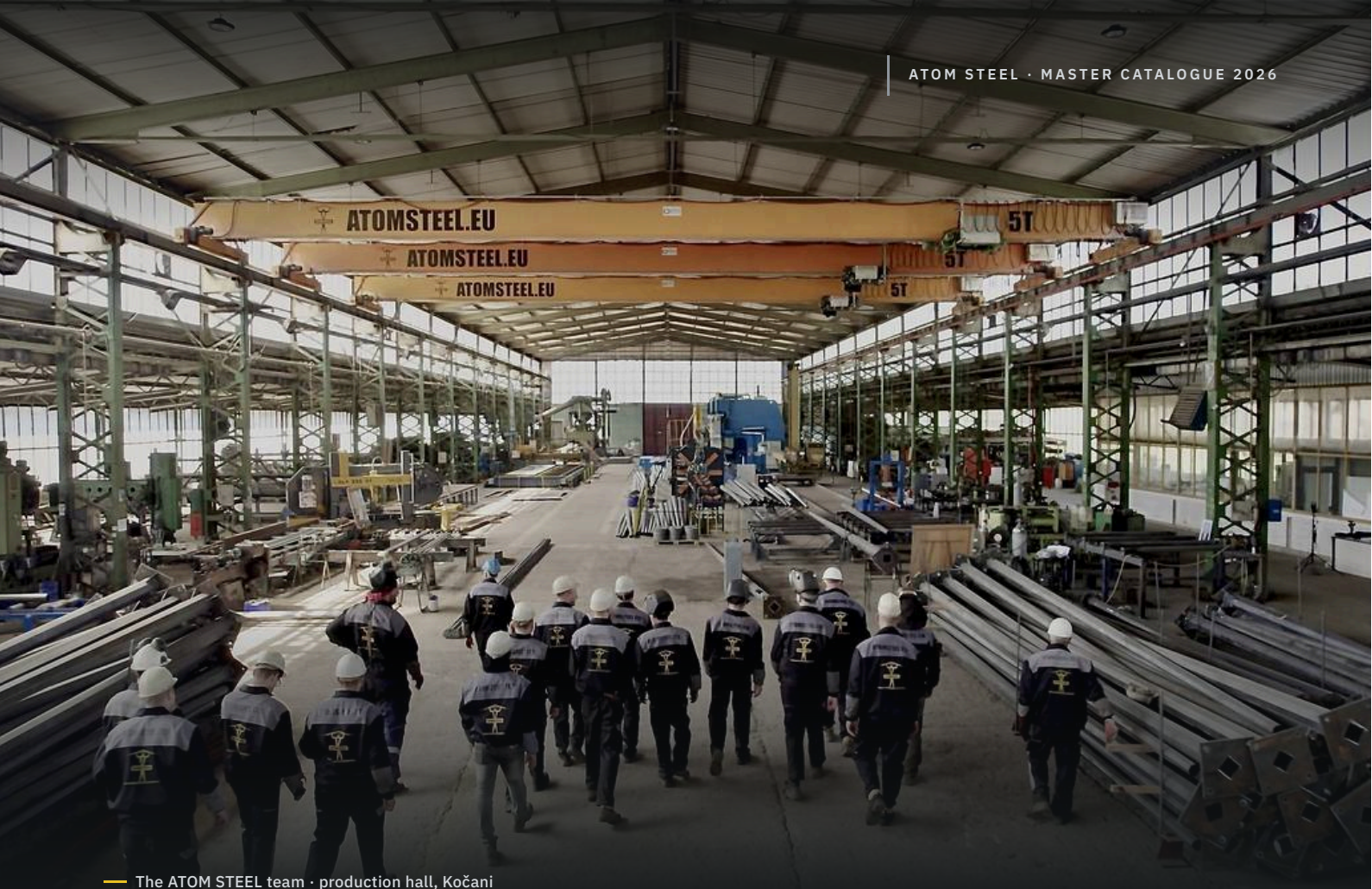
**25,000** m²
site area

**12,000** m²
covered production halls

**12** m
tandem press brake · 1,600 t

**EXC3**
certified execution class · EN 1090-2

— Main production hall — tandem press brake and CNC cutting table · Kočani plant




— The ATOM STEEL team · production hall, Kočani

ATOM STEEL · ATOM POLES

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WHO WE ARE

# STEEL POLES AND MASTS FROM OUR OWN PLANT

ATOM STEEL is a steel fabrication and engineering company in Kočani, North Macedonia. Under the ATOM POLES product brand we manufacture street lighting poles, octagonal and round conical columns, multi-section high masts and engineered poles — from the CNC-cut plate to the finished pole, in our own halls and under our own certified quality system.

THE COMPANY

**ATOM STEEL** — manufacturer and corporate brand: engineering, fabrication, quality control and delivery.

THE PRODUCT BRAND

**ATOM POLES** — our range of steel poles and masts: street lighting poles, high masts, special and engineered poles. Telecom and transmission monopoles are development programmes.

**25,000**
m² site area
Kočani production plant

**12,000**
m² covered factory halls
in our own plant

**12 m**
press-brake length for long sections

**EXC3**
certified FPC to EN 1090-1



— Pole shafts in the production hall · Kočani plant



Company archive · historic photograph



OUR HISTORY

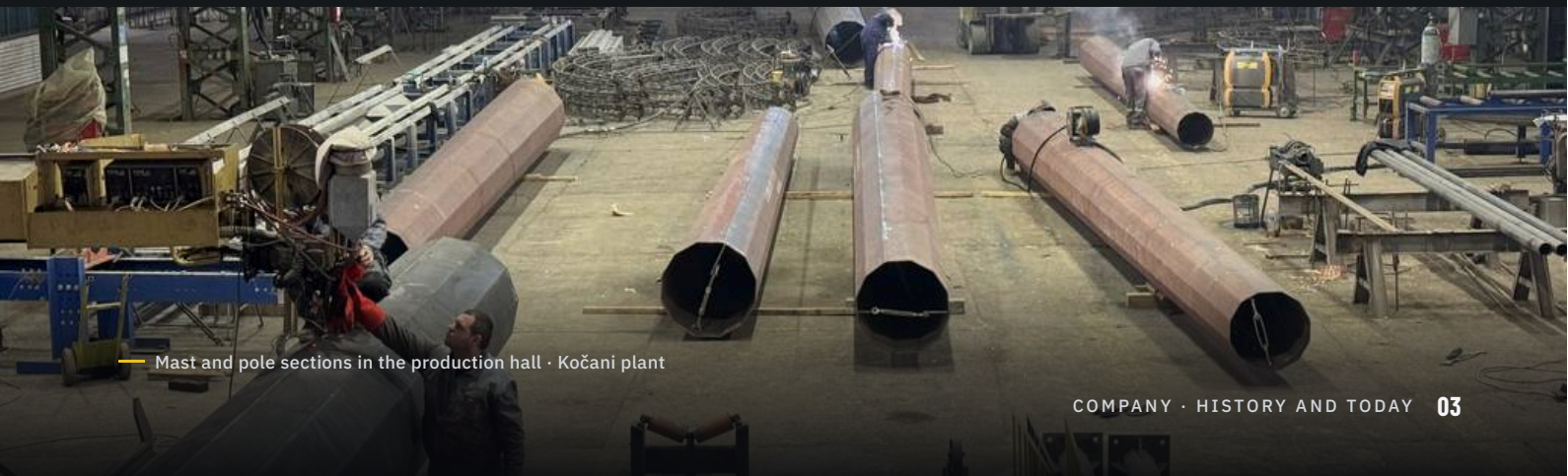
# INDUSTRIAL ROOTS SINCE THE 1960S

Our industrial roots in Kočani go back to the 1960s. Today the plant combines this industrial base with CNC cutting, a 12 m tandem press brake, automatic submerged-arc welding and certified factory production control.

PRODUCT PROGRAMME AND STATUS

| | | | |
|---|---|---|---|
| **Street lighting poles** | ● STANDARD RANGE | Round conical 2–12 m and octagonal 6–14 m columns, 15–18 m on request — with doors, base plates and anchor sets | 16 |
| **High masts** | ● PROJECT-ENGINEERED | Slip-jointed polygonal masts for stadiums, ports, airports and large areas — engineered to project requirements. | 28 |
| **Special poles** | ● PROJECT-ENGINEERED | Floodlight, camera and CCTV poles engineered to the project specification | 36 |
| **Monopoles** | ● DEVELOPMENT PROGRAMME | Telecom and power transmission monopoles (110–220 kV concepts) — offered with project-specific design and an agreed pilot | 38 |
| **Steel fabrication** | ● PROJECT-ENGINEERED | Poles, mast sections and welded components to customer drawings · EN 1090-2 up to EXC3 | 55 |

Project supply and logistics: pages 52–54. Certificates: pages 50–51.



Mast and pole sections in the production hall · Kočani plant

FACTORY & INFRASTRUCTURE

# ONE PLANT — THE FULL FABRICATION CHAIN

Cutting, forming, welding, inspection and loading take place in our own halls in Kočani. Long sections move between the work stations on our own overhead cranes and leave the plant fully documented.



ATOM STEEL plant, Kočani — production halls and loading yard

| ≈ 25,000 m² | ≈ 12,000 m² | ≈ 50 | ≈ 3,000 t |
|---|---|---|---|
| site area | covered production halls | employees | steel per year · whole plant |

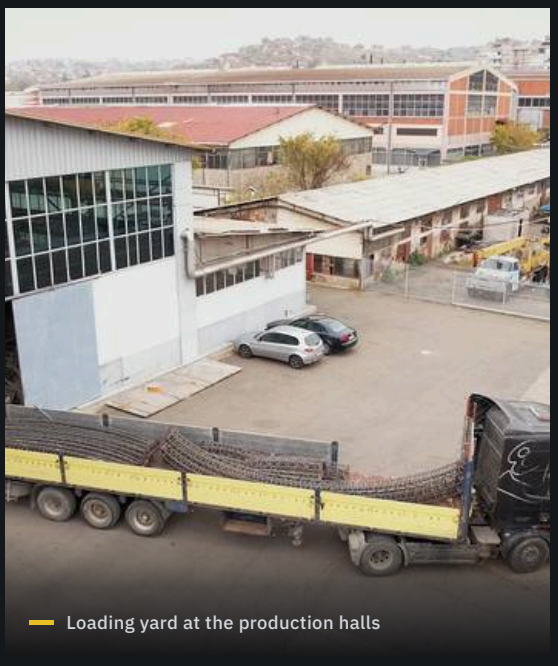
| PLANT AT A GLANCE | |
|---|---|
| PROCESSES | cutting, press forming, rolling, welding, inspection and loading in one plant |
| CRANES | overhead cranes, including 3 × 5 t |
| GALVANIZING | hot-dip galvanizing at approved partner plants |
| QUALITY SYSTEM | factory production control certified to EN 1090-1 · welding quality to EN ISO 3834-2 |
| LOCATION | Kočani, eastern North Macedonia · road transport across Europe |



Main hall — tandem press brake, CNC cutting and overhead cranes



Production hall with overhead crane


Loading yard at the production halls

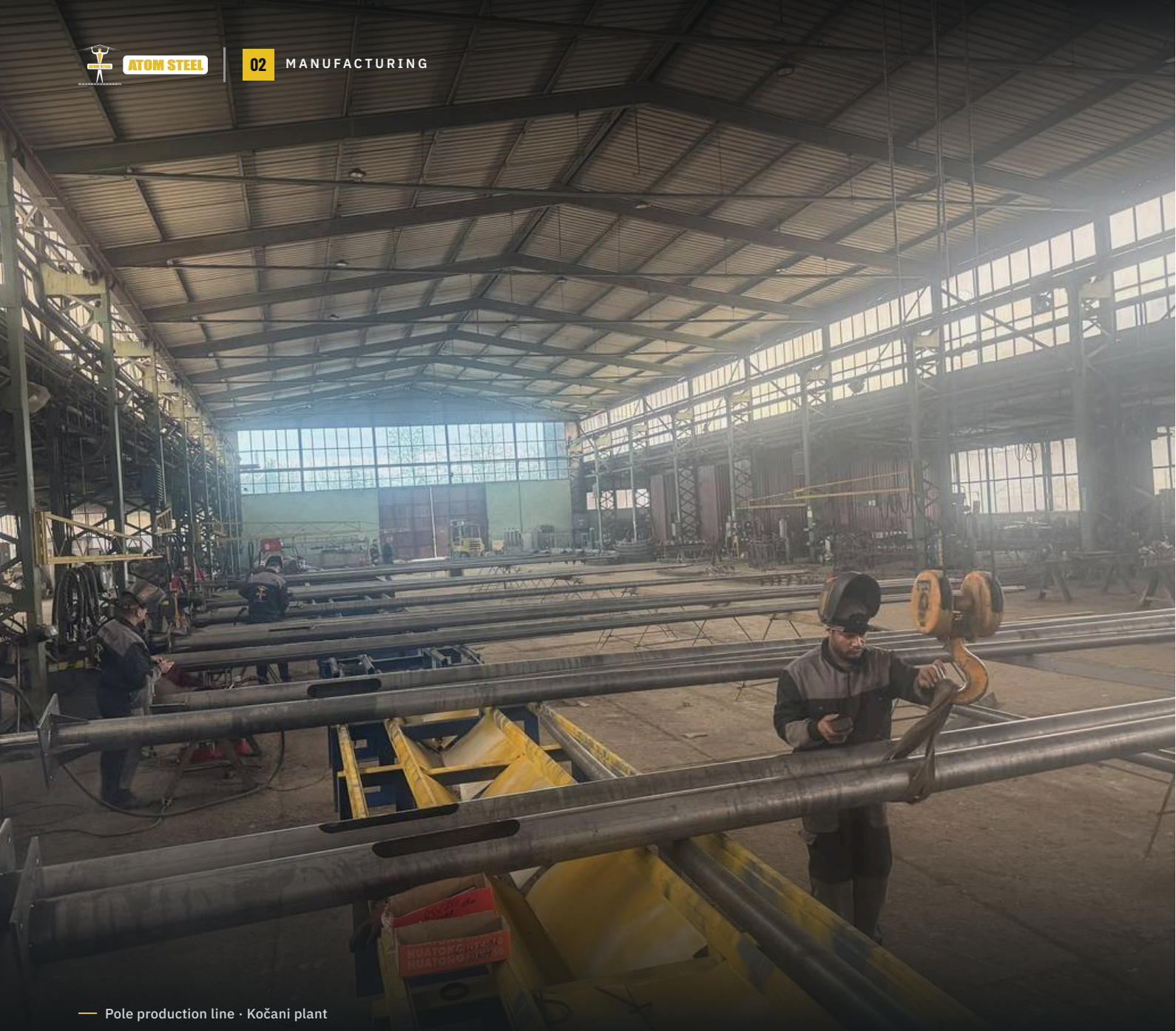
PRODUCTION EQUIPMENT

| | |
|---|---|
| FORMING | Tandem CNC press brake 12 m · 2 × 800 t (Delem DA66T) · press brake approx. 800 t / 6 m |
| CUTTING | CNC plasma cutting · Hypertherm MAXPRO200 |
| ROLLING | Three plate-rolling machines, 3,100 mm working width |
| WELDING | Automatic submerged-arc welding (column-and-boom and carriage units) · CNC longitudinal seam welding line · MIG/MAG stations |
| OTHER | Shot blasting · heavy section bending press |

### Long sections
Work stations are laid out for shafts and mast sections of up to approx. 12 m in one piece.

### Own cranes
Overhead cranes, including 3 × 5 t, for safe handling from cutting to loading.

### One quality system
All production steps run under one certified factory production control.



Pole production line · Kočani plant

OUR MANUFACTURING POWER

# CUT · FORM · WELD · INSPECT

Cutting, forming, rolling and welding run on our own machines with our own qualified team. Hot-dip galvanizing is carried out at approved partner plants.

**01**
### CNC CUTTING
Plate blanks, base plates and flanges cut on CNC plasma.

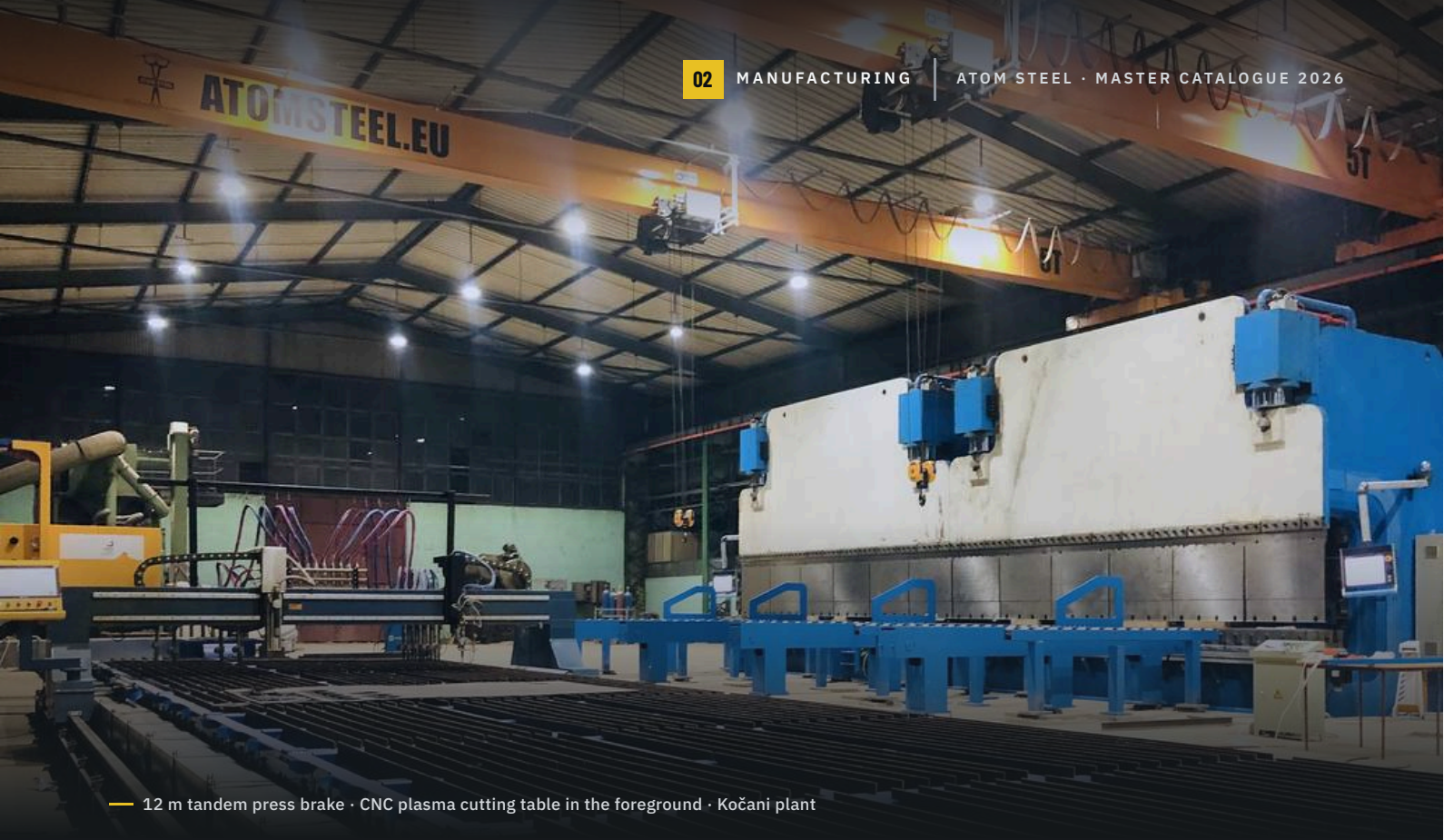
**02**
### PRESS FORMING
Half-shells formed on the 12 m tandem press brake.

**03**
### SEAM WELDING
Automatic submerged-arc welding of the longitudinal seams.

**04**
### INSPECTION
Fit-up, visual and dimensional checks before release.

**05**
### FINISH & DISPATCH
Hot-dip galvanizing to EN ISO 1461 · loading from our own yard.

ONE PLANT — **25,000 m²** site — **12,000 m²** covered halls — **3 × 5 t** overhead cranes — **≈ 3,000 t** capacity / year




12 m tandem press brake · CNC plasma cutting table in the foreground · Kočani plant

FORMING CAPACITY

# 12-METRE TANDEM PRESS BRAKE

Two synchronised 800 t press-brake units operate as one machine with a 12 m bending length. Tapered half-shells are formed along their full length — the basis for polygonal pole and mast sections of up to approx. 12 m with two longitudinal seams.

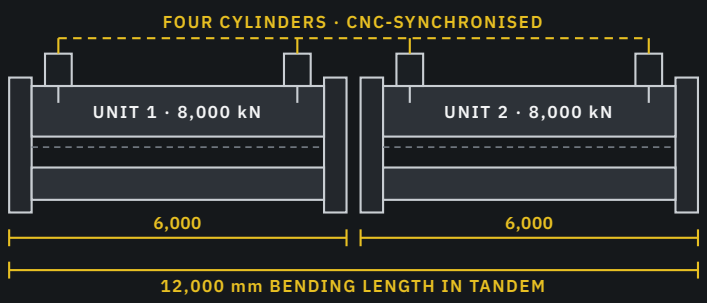
**12 m**
bending length · 2 × 6,000 mm

**1,600 t**
press force · 2 × 8,000 kN

**1,500 mm**
throat depth

**400 mm**
ram stroke

TANDEM CONFIGURATION · FRONT ELEVATION




Schematic, not to scale.

MACHINE DATA

| | |
|---|---|
| TYPE | CNC tandem press brake · two units |
| SYNCHRONISATION | Electro-hydraulic · four cylinders |
| NOMINAL FORCE | 2 × 8,000 kN (approx. 1,600 t) |
| BENDING LENGTH | 2 × 6,000 mm (12,000 mm) |
| THROAT DEPTH | 1,500 mm |
| RAM STROKE | 400 mm |
| OPEN HEIGHT | 1,500 mm |
| CNC CONTROL | Delem DA66T |

Machine data from the manufacturer's documentation.



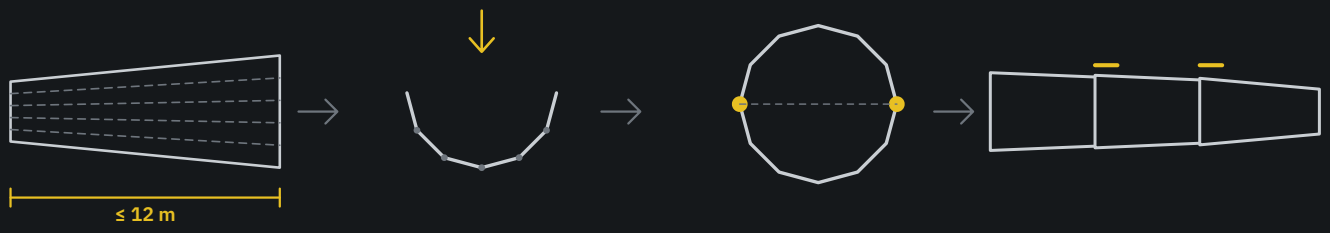
12 m tandem press brake — two synchronised units, one machine

PRESS FORMING

# TWO HALF-SHELLS, TWO SEAMS

Every polygonal section is made from two longitudinal, tapered half-shells. Each half is bent along its full length on the tandem press brake; the two halves are then joined by two longitudinal seam welds.

FROM PLATE TO SECTION




**01**

**CNC-cut blank.** Tapered plate, plasma cut to the developed shape.

**02**

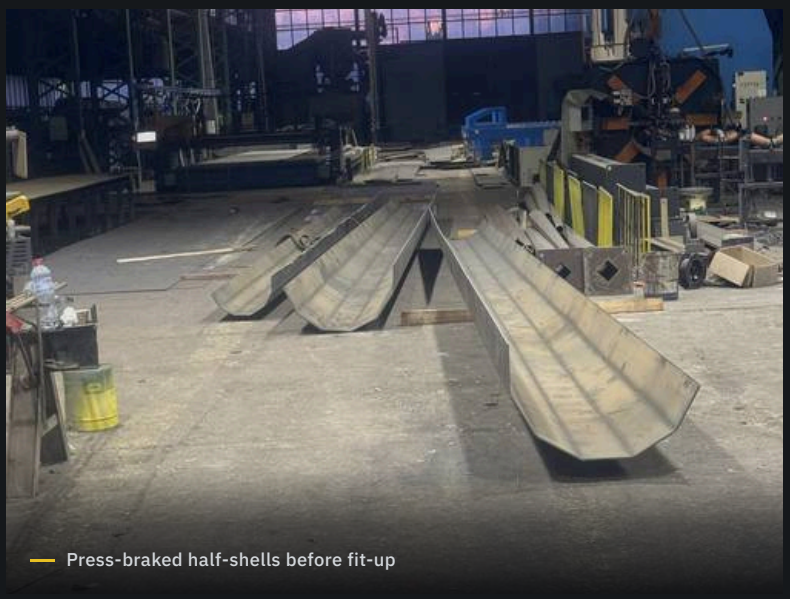
**Press-braked half-shell.** Each half formed on the 12 m tandem press brake.

**03**

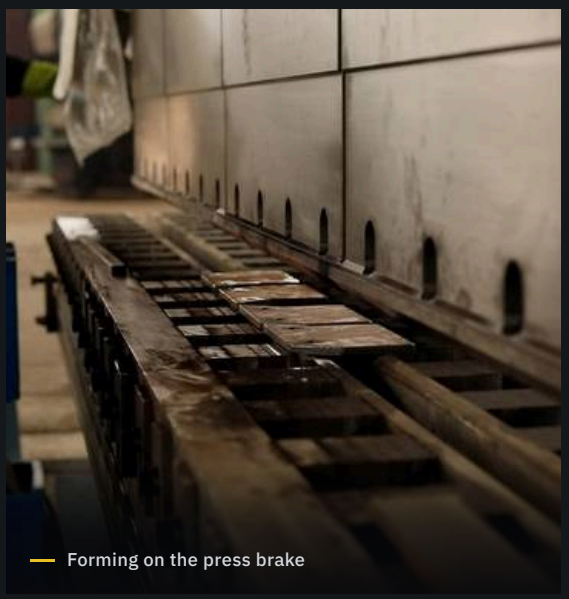
**Two halves, two seams.** Closed by automatic submerged-arc (SAW) welding.

**04**

**Slip-jointed sections.** Sections up to approx. 12 m; taller masts by slip joints.



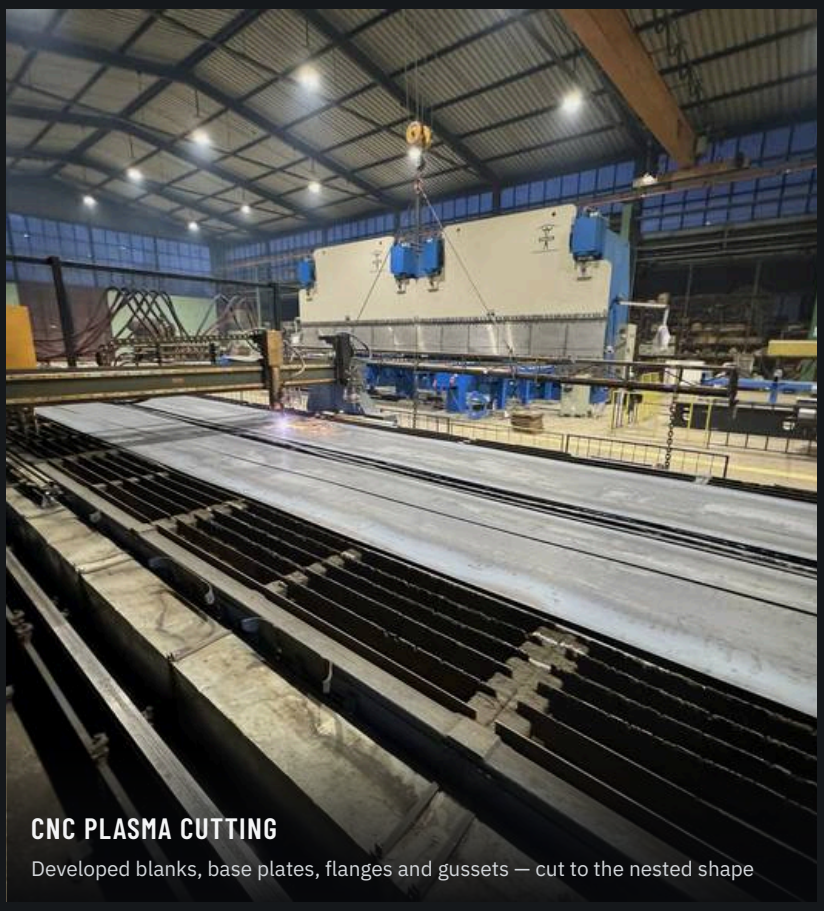
Press-braked half-shells before fit-up



Forming on the press brake

CUTTING & ROLLING

# CNC PLASMA CUTTING AND PLATE ROLLING



## CNC PLASMA CUTTING

Developed blanks, base plates, flanges and gussets — cut to the nested shape



— Cutting head on the CNC table



## PLATE ROLLING

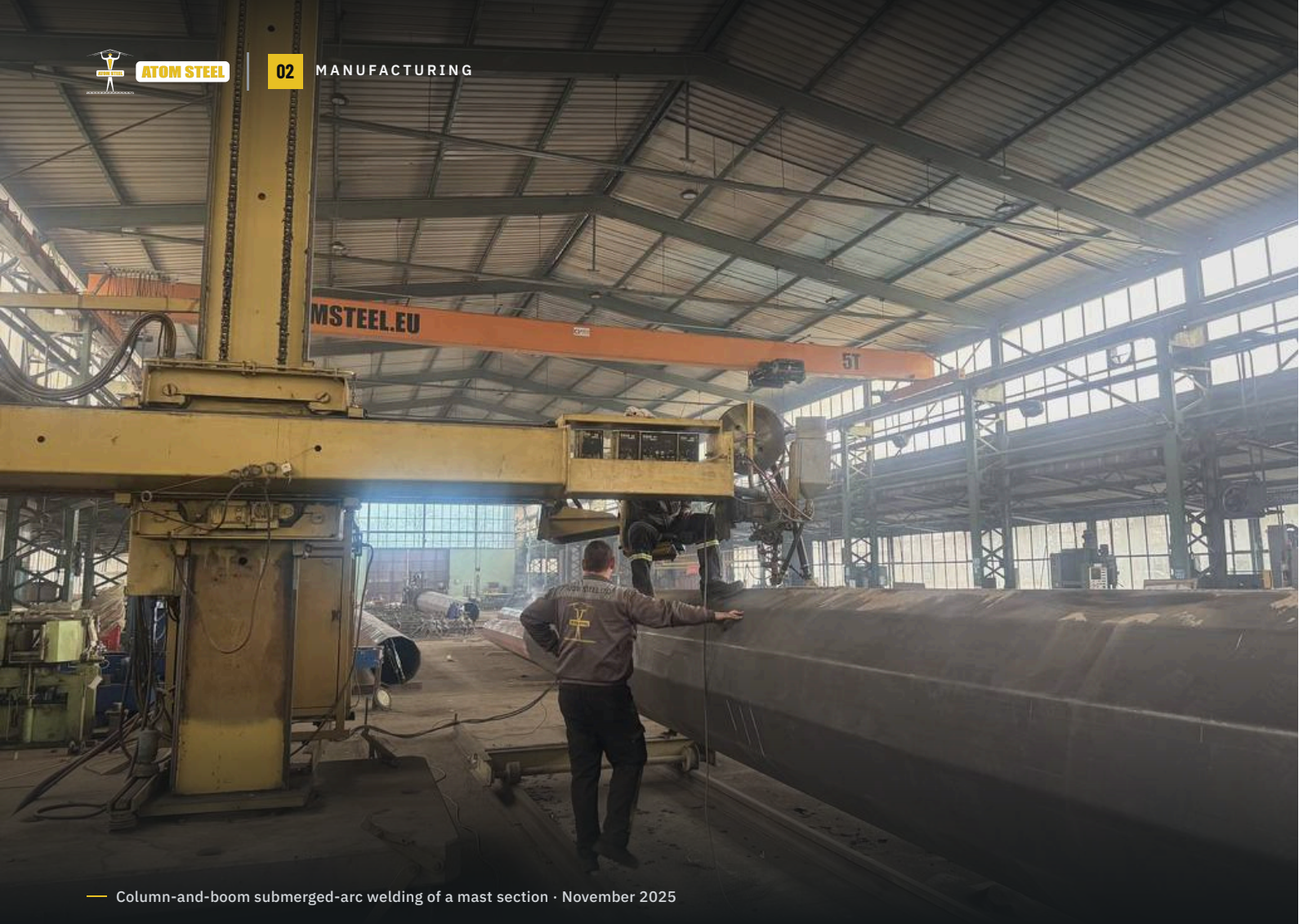
Cylindrical and conical shells

| CNC CUTTING | |
|---|---|
| CUTTING | CNC plasma cutting · Hypertherm MAXPRO200 |
| PARTS | Developed shaft blanks, base plates, flanges, gussets and door reinforcements |

| PLATE ROLLING | |
|---|---|
| ROLLING | Three plate-rolling machines |
| WORKING WIDTH | 3,100 mm |
| PARTS | Cylindrical and conical shells |



— Rolled cylindrical shells ready for dispatch




— Column-and-boom submerged-arc welding of a mast section · November 2025

WELDING

# AUTOMATIC SEAM WELDING

Long shaft and mast seams are welded by automatic submerged-arc units. Base plates, door frames, brackets and stiffeners are welded by MIG/MAG.

| | |
|---|---|
| EQUIPMENT | Column-and-boom and carriage submerged-arc units · CNC longitudinal seam welding line · MIG/MAG stations |
| COORDINATION | Welding coordination by IWE-qualified welding engineers |
| WELDERS | Qualified to EN ISO 9606-1 · welding operators to EN ISO 14732 |
| PROCEDURES | Qualified welding procedures for submerged-arc (121) and MAG (135) welding of S235 and S355 steels |

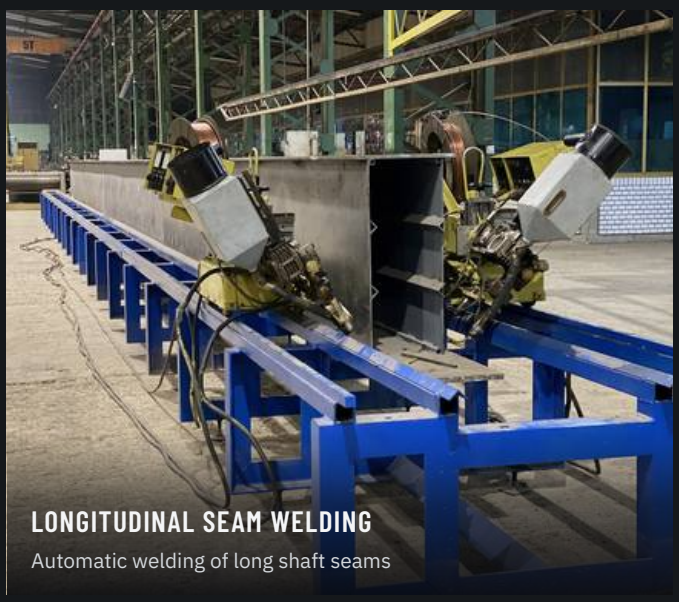
**121 · 135**
qualified welding processes: SAW · MAG

**S235 · S355**
steel groups in the welding approvals

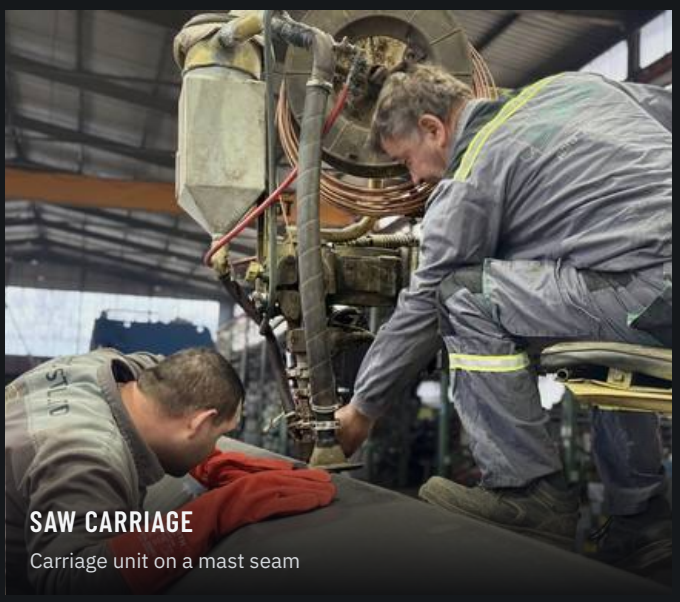
**EXC3**
certified up to · EN 1090-2

SEAM QUALITY

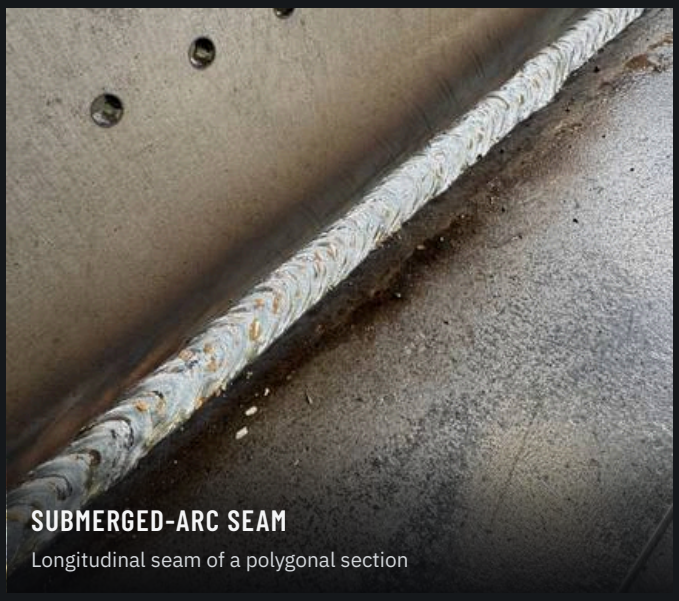
# WELDED TO QUALIFIED PROCEDURES



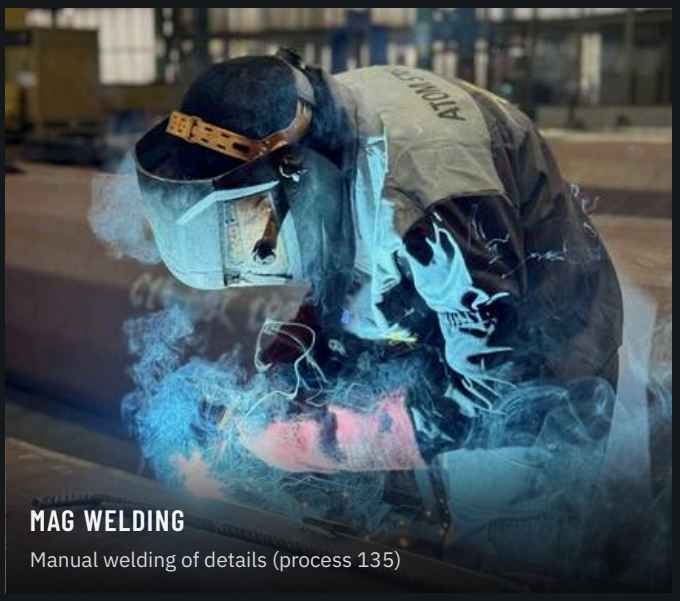
**LONGITUDINAL SEAM WELDING**
Automatic welding of long shaft seams



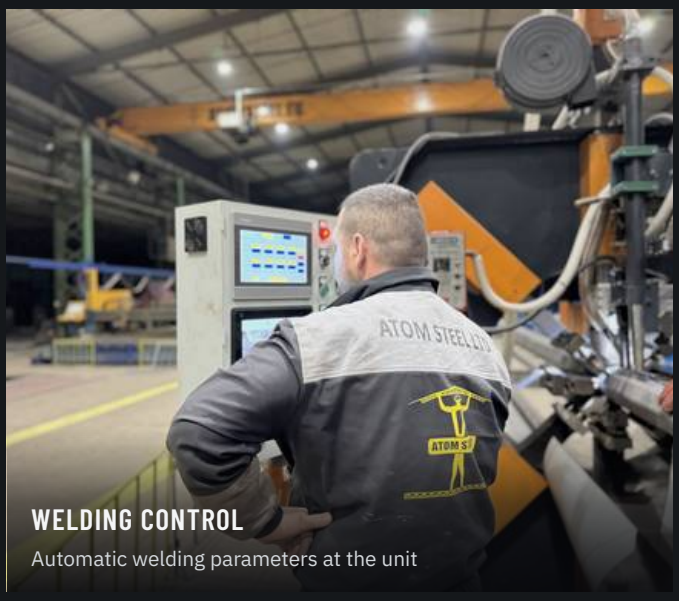
**SAW CARRIAGE**
Carriage unit on a mast seam



**SUBMERGED-ARC SEAM**
Longitudinal seam of a polygonal section



**MAG WELDING**
Manual welding of details (process 135)



**WELDING CONTROL**
Automatic welding parameters at the unit




**ATTACHMENTS**
Stiffeners, lugs and fittings



Hot-dip galvanized columns and fittings ready for dispatch

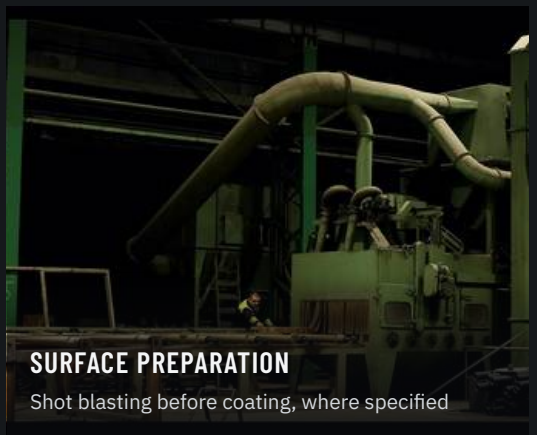
SURFACE PROTECTION

# HOT-DIP GALVANIZED

Poles, masts and accessories are hot-dip galvanized to EN ISO 1461 at approved partner plants — inside and outside, in one dip where the section length allows.

| | |
|---|---|
| STANDARD | EN ISO 1461 — coating thickness according to the steel thickness |
| FASTENERS | Threaded parts galvanized to EN ISO 10684 |
| DESIGN | Vent and drain openings in every section · section lengths agreed with the galvanizing plant |
| APPEARANCE | Variations in colour and gloss are normal for hot-dip galvanized surfaces |
| RECORDS | Galvanizing certificate with each delivery |
| OTHER SYSTEMS | Further coating systems to the client's specification, on request |





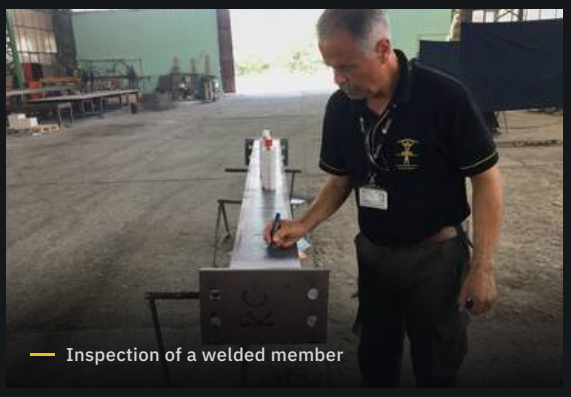
**SURFACE PREPARATION**
Shot blasting before coating, where specified

Galvanizing steps: degreasing · pickling · fluxing · dipping in molten zinc · cooling and inspection.

QUALITY CONTROL

# QUALITY BUILT INTO EVERY STEP

| | |
|---|---|
| TESTING | Visual and non-destructive testing by personnel qualified to EN ISO 9712 |
| MATERIALS | Plates and sections with inspection certificates 3.1 to EN 10204 · traceable through production |
| DIMENSIONS | Length, straightness, cross-section and base plate checked before release |
| DOCUMENTS | Material certificates, inspection records and galvanizing certificate with each delivery · Declaration of Performance where CE marking applies |



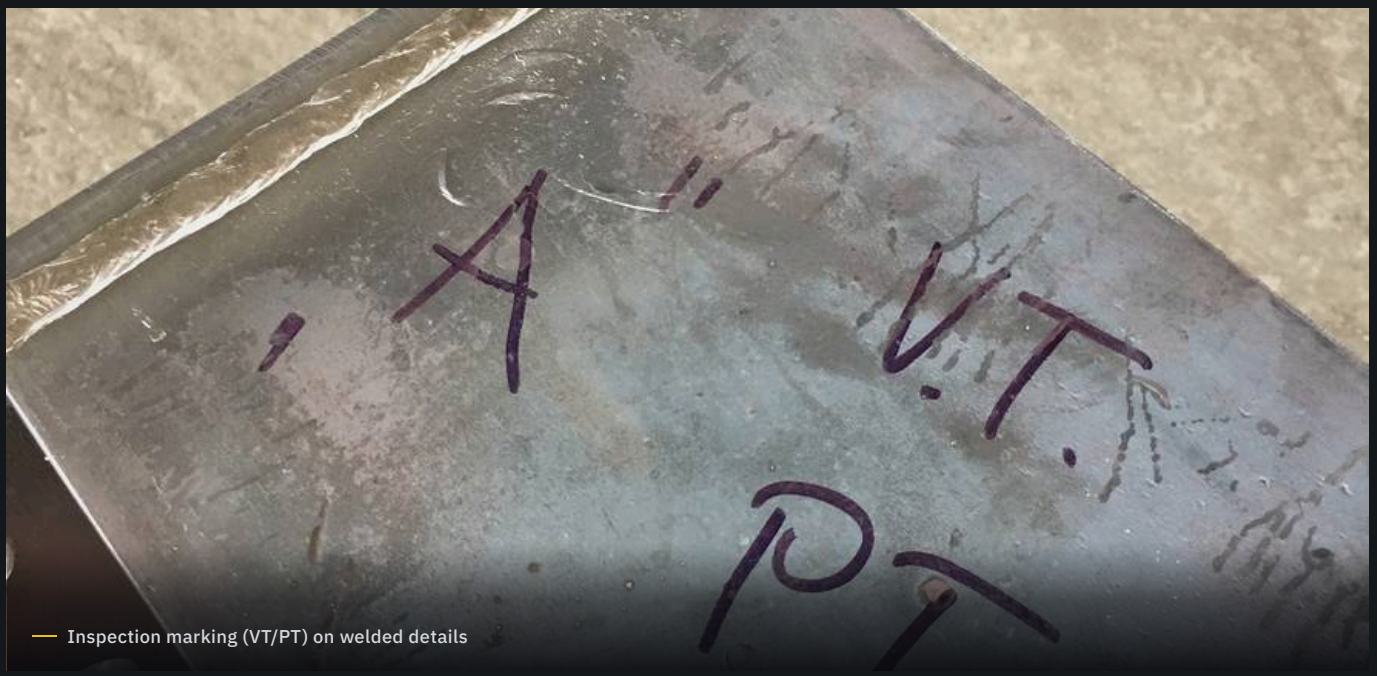
— Inspection of a welded member




— Inspection marking on a weld (VT)

INSPECTION POINTS ALONG THE PRODUCTION ROUTE

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 |
|---|---|---|---|---|---|---|---|
| **Material receipt** | **Cutting** | **Forming** | **Welding** | **VT / NDT** | **Galvanizing** | **Final inspection** | **Dispatch** |
| 3.1 certificates | blank check | profile check | to qualified WPS | dimensional check | partner plant | coating & marking | documents |




— Inspection marking (VT/PT) on welded details

Factory production control certified to EN 1090-1 for execution classes up to EXC3 · welding quality to EN ISO 3834-2 · certificates on pages 50–51.

PRODUCT PROGRAMME

# FROM 2 M COLUMNS TO PROJECT MASTS

**● STANDARD RANGE**
Catalogue products with standard dimensions and tables in this catalogue.

**● PROJECT-ENGINEERED**
Designed for each project on a documented production basis.

**● DEVELOPMENT PROGRAMME**
Offered with project-specific design and an agreed pilot production.



● STANDARD RANGE 16

## ROUND CONICAL POLES

2–12 m · one-piece conical shafts · 3–4 mm wall



● STANDARD RANGE 22

## OCTAGONAL POLES

6–14 m standard · 15–18 m on request · 4–5 mm wall



● PROJECT-ENGINEERED 28

## HIGH MASTS

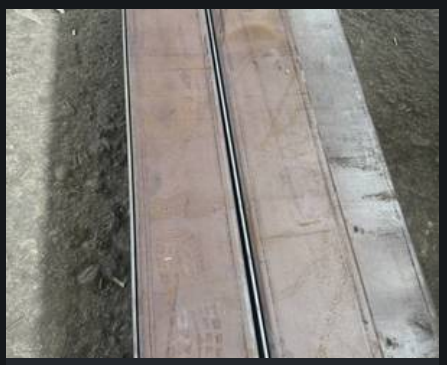
Slip-jointed polygonal sections · engineered for each project



● STANDARD RANGE 46

## BRACKETS & ACCESSORIES

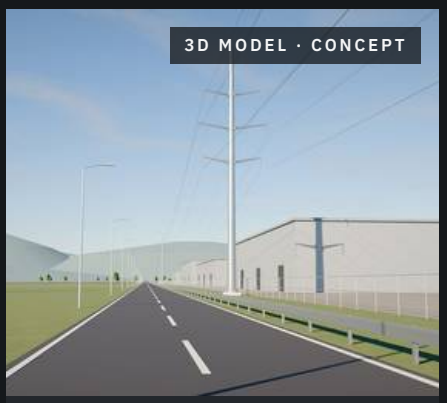
Arms, doors, base plates and anchor bolt sets



● PROJECT-ENGINEERED 55

## CUSTOM & OEM FABRICATION

Poles and welded sections to customer drawings




● DEVELOPMENT PROGRAMME 40

## TRANSMISSION MONOPOLES

Concept family for 110–220 kV overhead lines

● PROJECT-ENGINEERED 36

## SPECIAL & CAMERA POLES

Floodlight columns, CCTV and camera poles

● DEVELOPMENT PROGRAMME 38

## TELECOM MONOPOLES

Polygonal monopoles for antenna loads and access systems

● PROJECT-ENGINEERED 44

## TRANSMISSION-LINE STRUCTURES

Fabricated steel components to the designer's drawings

HEIGHT RANGES

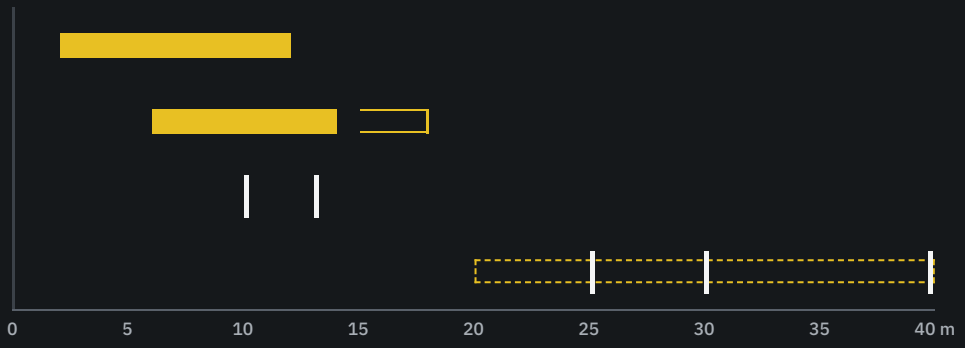
# WHAT WE BUILD, AND HOW TALL

**ROUND CONICAL**
one-piece shaft

**OCTAGONAL**
6–14 m standard · 15–18 m on request

**FLOODLIGHT COLUMNS**
certified types SR 10 · SR 13

**HIGH MASTS**
project-engineered · site-specific design




Solid: standard range · outline: on request · dashed: project-engineered · illustrative heights (25 m, 30 m, 40 m).

APPLICATIONS

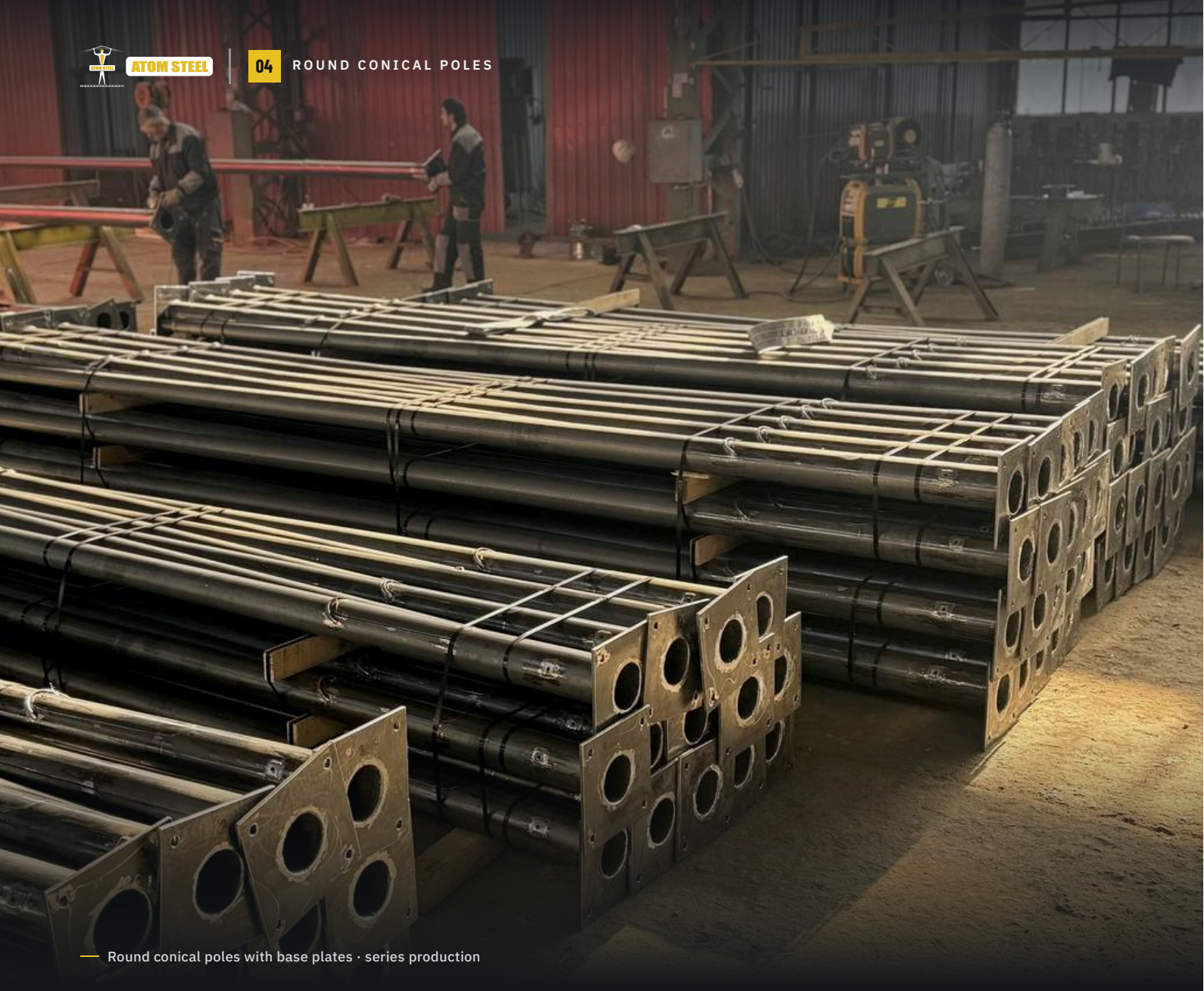
# WHERE OUR POLES ARE USED

| APPLICATION | ROUND CONICAL | OCTAGONAL | HIGH MASTS | SPECIAL POLES |
|---|---|---|---|---|
| Streets & residential roads | ● | ● | | |
| Roads & motorways | | ● | ○ | |
| Junctions & interchanges | | ● | ● | |
| Parks & pedestrian areas | ● | ○ | | |
| Car parks | ● | ● | ○ | |
| Industrial & logistics yards | | ● | ● | ○ |
| Ports & terminals | | | ● | |
| Airports & aprons | | | ● | |
| Stadiums & sports grounds | | | ● | ● |
| CCTV & monitoring | | | | ● |

● typical use · ○ depending on height and lighting design



Lighting poles in production · Kočani plant



Round conical poles with base plates · series production

● STANDARD RANGE

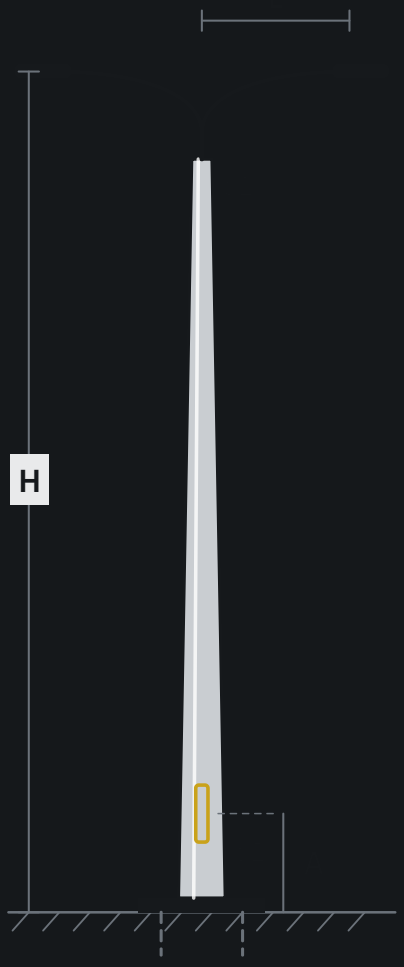
# ROUND CONICAL POLES

One-piece conical shafts from 2 to 12 m for streets, residential areas, parks and car parks — supplied with inspection door and base plate with anchor set, or as a planted version.

| 2–12 m | 11 · 13 mm/m | 60–210 mm | 3–4 mm |
|---|---|---|---|
| height range | taper | top diameter | wall thickness |

CONSTRUCTION

# ONE SHAFT, ONE SEAM



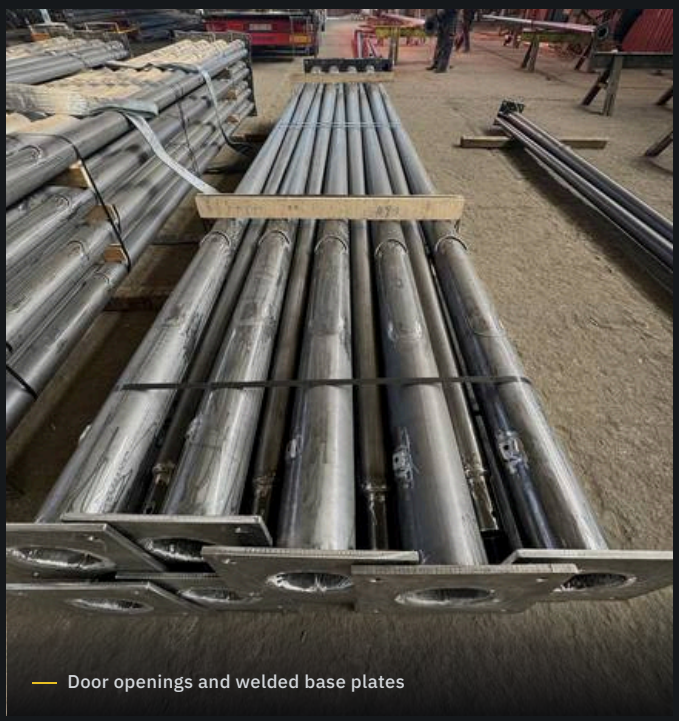

| | |
|---|---|
| SHAFT | One-piece conical shaft, one longitudinal seam |
| BASE DIAMETER | max. 236 mm (11 mm/m) · 268 mm (13 mm/m) |
| DOOR | 400 × 100 to 500 × 140 mm, 600 mm above ground · lever lock with Allen key |
| FITTINGS | 2 × 4 welded M10 nuts for equipment · earthing lug |
| STEEL | S235JR · S355J0 on request — EN 10025-2 |
| FINISH | Hot-dip galvanized to EN ISO 1461 at approved partner plants |

## CONFIGURATIONS

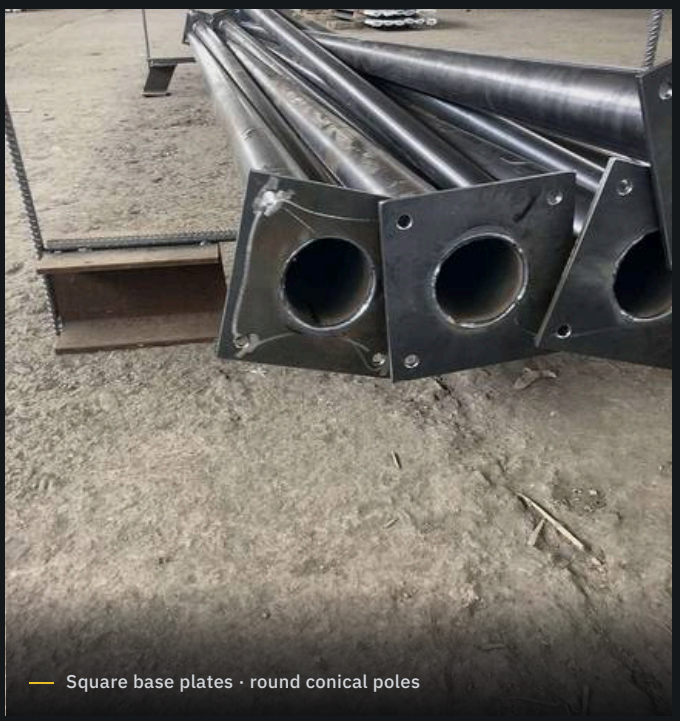
- Single-arm
- Double-arm
- Multi-arm 4 / 6
- Base plate
- Planted

## TYPICAL APPLICATIONS

- Streets & residential roads
- Parks & pedestrian areas
- Car parks
- Industrial sites



— Door openings and welded base plates



— Square base plates · round conical poles

ROUND CONICAL POLES · DIMENSIONS

# DIAMETER TABLES

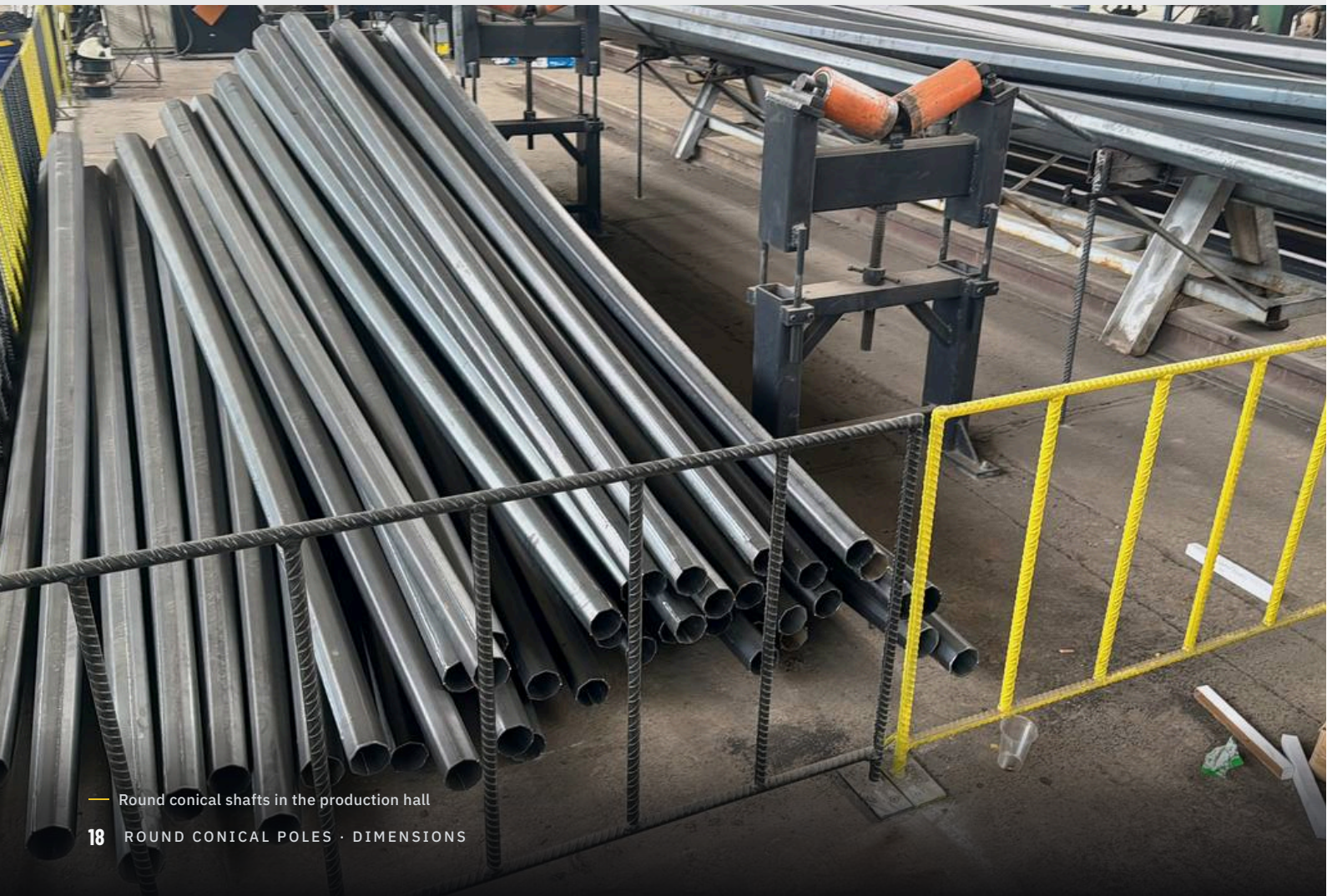
The base (big-end) diameter follows from the top diameter d, the taper and the shaft length L. Two standard tapers are available; shafts up to 12 m are made in one piece.

## TAPER 11 MM/M · BIG-END DIAMETER D IN MM · MAX. 236 MM

TOP DIAMETER D (MM) →

| L (m) \ d | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 190 | 200 | 210 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **2** | 82 | 92 | 102 | 112 | 122 | 132 | 142 | 152 | 162 | 172 | 182 | 192 | 202 | 212 | 222 | 232 |
| **3** | 93 | 103 | 113 | 123 | 133 | 143 | 153 | 163 | 173 | 183 | 193 | 203 | 213 | 223 | 233 | – |
| **4** | 104 | 114 | 124 | 134 | 144 | 154 | 164 | 174 | 184 | 194 | 204 | 214 | 224 | 234 | – | – |
| **5** | 115 | 125 | 135 | 145 | 155 | 165 | 175 | 185 | 195 | 205 | 215 | 225 | 235 | – | – | – |
| **6** | 126 | 136 | 146 | 156 | 166 | 176 | 186 | 196 | 206 | 216 | 226 | 236 | – | – | – | – |
| **7** | 137 | 147 | 157 | 167 | 177 | 187 | 197 | 207 | 217 | 227 | – | – | – | – | – | – |
| **8** | 148 | 158 | 168 | 178 | 188 | 198 | 208 | 218 | 228 | – | – | – | – | – | – | – |
| **9** | 159 | 169 | 179 | 189 | 199 | 209 | 219 | 229 | – | – | – | – | – | – | – | – |
| **10** | 170 | 180 | 190 | 200 | 210 | 220 | 230 | – | – | – | – | – | – | – | – | – |
| **11** | 181 | 191 | 201 | 211 | 221 | 231 | – | – | – | – | – | – | – | – | – | – |
| **12** | 192 | 202 | 212 | 222 | 232 | – | – | – | – | – | – | – | – | – | – | – |

L = shaft length in m. Values in mm, calculated as D = d + taper × L. “–” = above the maximum base diameter for the taper. Wall thickness 3–4 mm.



— Round conical shafts in the production hall

## TAPER 13 MM/M · BIG-END DIAMETER D IN MM · MAX. 268 MM

TOP DIAMETER D (MM) →

| L (m) \ d | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 190 | 200 | 210 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 86 | 96 | 106 | 116 | 126 | 136 | 146 | 156 | 166 | 176 | 186 | 196 | 206 | 216 | 226 | 236 |
| 3 | 99 | 109 | 119 | 129 | 139 | 149 | 159 | 169 | 179 | 189 | 199 | 209 | 219 | 229 | 239 | 249 |
| 4 | 112 | 122 | 132 | 142 | 152 | 162 | 172 | 182 | 192 | 202 | 212 | 222 | 232 | 242 | 252 | 262 |
| 5 | 125 | 135 | 145 | 155 | 165 | 175 | 185 | 195 | 205 | 215 | 225 | 235 | 245 | 255 | 265 | – |
| 6 | 138 | 148 | 158 | 168 | 178 | 188 | 198 | 208 | 218 | 228 | 238 | 248 | 258 | 268 | – | – |
| 7 | 151 | 161 | 171 | 181 | 191 | 201 | 211 | 221 | 231 | 241 | 251 | 261 | – | – | – | – |
| 8 | 164 | 174 | 184 | 194 | 204 | 214 | 224 | 234 | 244 | 254 | 264 | – | – | – | – | – |
| 9 | 177 | 187 | 197 | 207 | 217 | 227 | 237 | 247 | 257 | 267 | – | – | – | – | – | – |
| 10 | 190 | 200 | 210 | 220 | 230 | 240 | 250 | 260 | – | – | – | – | – | – | – | – |
| 11 | 203 | 213 | 223 | 233 | 243 | 253 | 263 | – | – | – | – | – | – | – | – | – |
| 12 | 216 | 226 | 236 | 246 | 256 | 266 | – | – | – | – | – | – | – | – | – | – |

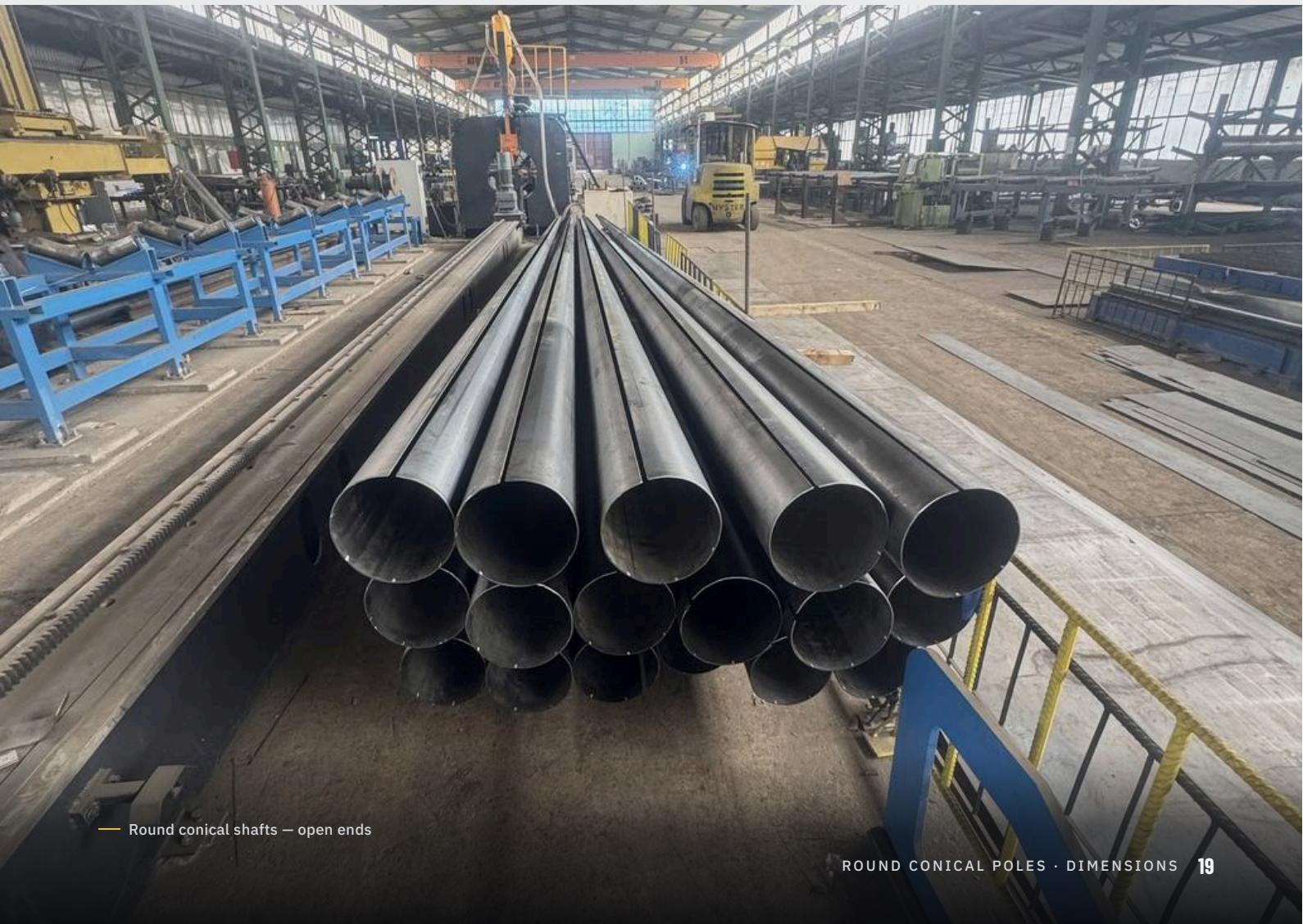
L = shaft length in m. Values in mm, calculated as D = d + taper × L. "–" = above the maximum base diameter for the taper. Wall thickness 3–4 mm.

### READING THE TABLES

Choose the shaft length L and the top diameter d required by the luminaire or bracket; the table gives the big-end diameter D at the base. Example for the 13 mm/m taper: L = 8 m and d = 70 mm give D = 70 + 13 × 8 = 174 mm.

### ORDERING DATA

Height above ground, top diameter or bracket type, base plate or planted version, door position, site and wind basis. The structural verification is prepared for the project site.



— Round conical shafts — open ends

CONFIGURATIONS

# BRACKETS, DOORS AND BASES

## BRACKETS

| Standard arms | Rise h1 | Outreach L | Bend radius R | Arm tube Ø × t |
|---|---|---|---|---|
| **Arm 1.0 / 1.0** | 1,000 | 1,000 | 700 | 60.3 × 2.90 |
| **Arm 1.0 / 1.5** | 1,000 | 1,500 | 700 | 60.3 × 2.90 |
| **Arm 2.0 / 2.0** | 2,000 | 2,000 | 1,000 | 60.3 × 3.65 |
| **Arm 2.0 / 2.5** | 2,000 | 2,500 | 1,500 | 60.3 × 3.65 |

Dimensions in mm. Arm rise 10°. Outreach is stated separately for each project; multi-arm brackets (4- and 6-way) on request.

## DOOR & FITTINGS

- **Opening** 400 × 100 to 500 × 140 mm (B × C), reinforced
- **Height** A = 600 mm above ground
- **Lock** locking lever, Allen-key type lock, steel chain, locating lug
- **Gear tray** 2 rows × 4 welded M10 nuts
- **Earthing** earthing lug

## BASE PLATE & ANCHORS

- **Base plate** square, four slotted holes · size graded with height: 250 · 300 · 350 · 400 mm
- **Anchor set** bolts, nuts, washers and template
- **Planted version** for direct embedment, on request

### MATERIAL & DESIGN

Steel S235JR, S355J0 on request (EN 10025-2). Structural verification to EN 40-3-1 / EN 40-3-3 for the project site. Hot-dip galvanized to EN ISO 1461.



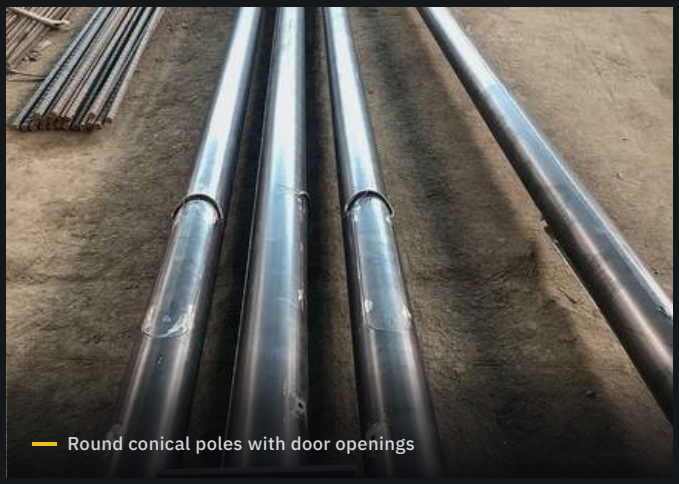
— Round conical poles with base plates, strapped in bundles

IN PRODUCTION

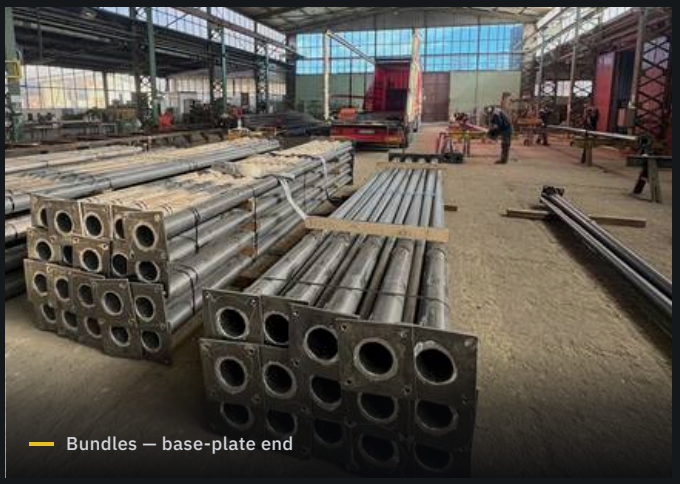
# ROUND CONICAL POLES



— Round conical poles with square base plates, bundled for dispatch



— Round conical poles with door openings



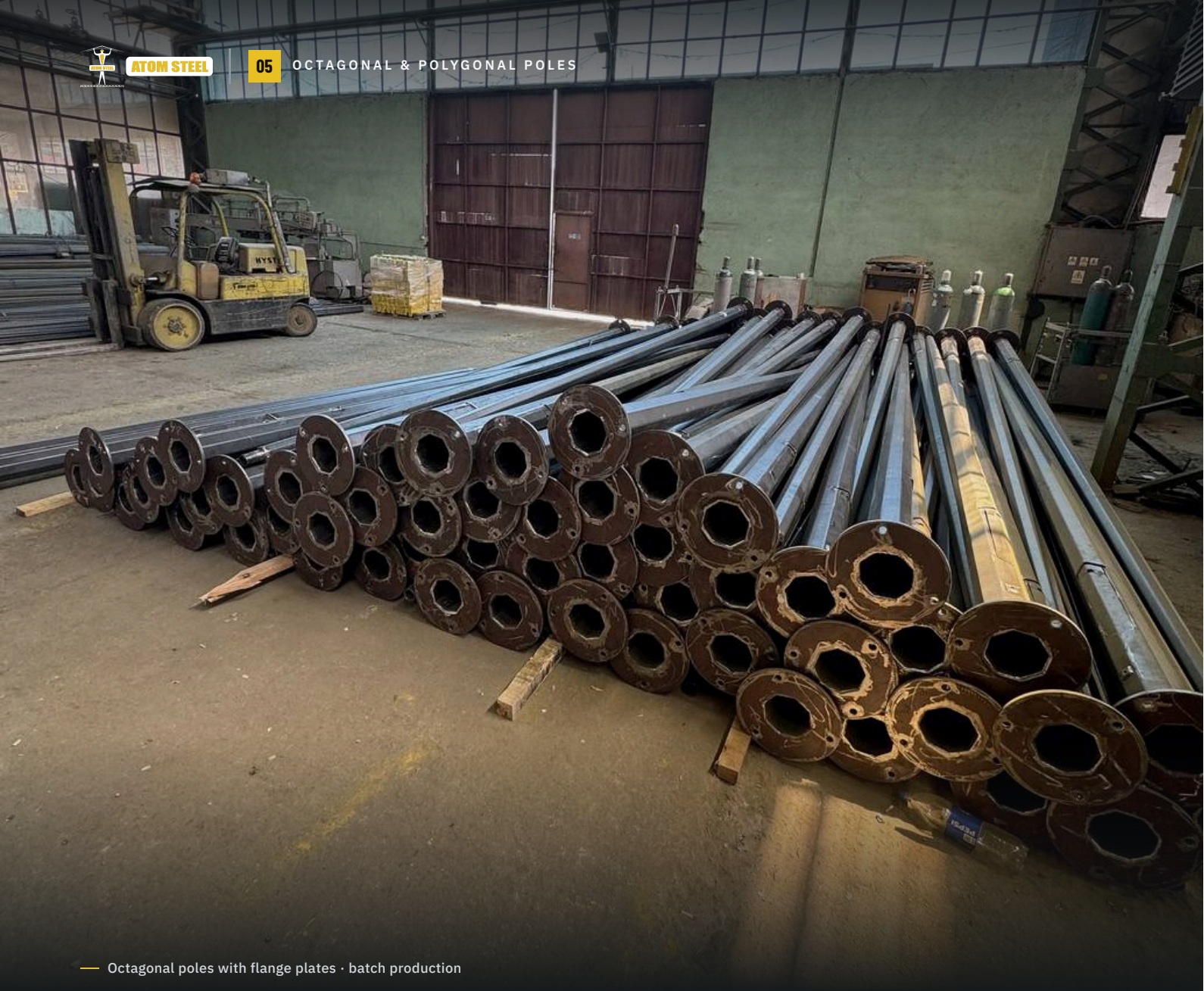
— Bundles — base-plate end



— Round conical shafts on the rack



— Square base plates before galvanizing



— Octagonal poles with flange plates · batch production

• STANDARD RANGE

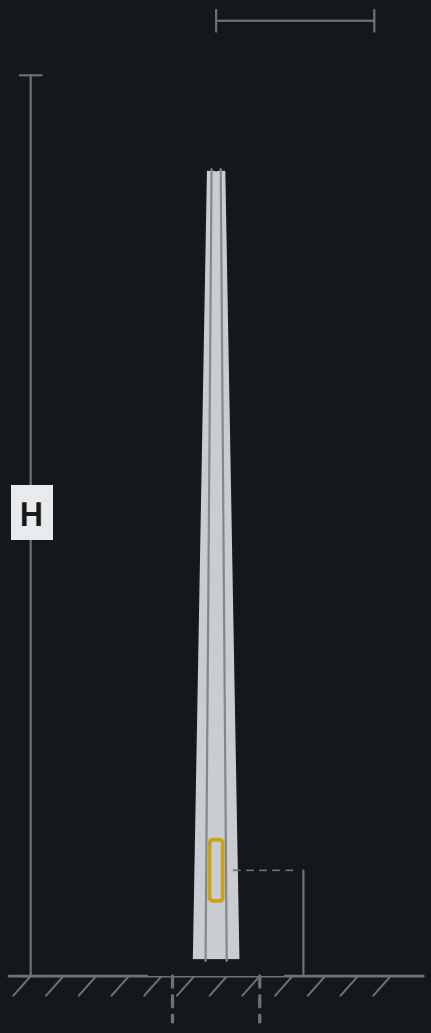
# OCTAGONAL POLES

Octagonal shafts formed from two press-braked halves for roads, junctions, logistics yards and area lighting — with reinforced door opening and base plate with anchor bolt set.

| 6–18 m | 75–105 mm | 130–375 mm | 4 · 5 mm |
|---|---|---|---|
| height range | top size d1 (A/F) | base size d2 (A/F) | wall thickness |

CONSTRUCTION

# TWO HALVES, TWO SEAMS




| | |
|---|---|
| SHAFT | Two press-braked halves, two longitudinal seams |
| HEIGHTS | 6–14 m standard · 15–18 m on request (5 mm wall, two-segment shaft) |
| DOOR | 400 × 100 to 500 × 140 mm, 600 mm above ground · reinforced opening |
| BASE | Base plate with four slotted holes · M18–M27 anchor bolt set |
| STEEL | S235JR · S355J0 on request — EN 10025-2 |
| FINISH | Hot-dip galvanized to EN ISO 1461 at approved partner plants |

### CERTIFIED TYPES

**SR 10 · SR 13** — EN 40-5 certificate of constancy of performance 1017-CPR-15.585.895 (page 26).

### CONFIGURATIONS AND APPLICATIONS

- Single-arm
- Double-arm
- Multi-arm 4 / 6
- Base plate
- Roads & motorways
- Junctions & squares
- Logistics & industrial yards
- Area & floodlighting



— Octagonal shafts — end view



— Reinforced door opening



— Base plate with stiffeners

OCTAGONAL POLES · DIMENSIONS

# STANDARD SIZES

Octagonal shafts with 4 mm wall for 6–14 m with long brackets, and 4–5 mm wall for 12–18 m with short brackets. Sizes d1 (top) and d2 (base) are measured across flats (A/F).

## 6-14 M · LONG BRACKET

| POLE | | | | | BRACKET ARM | | | |
|---|---|---|---|---|---|---|---|---|
| H | h | d1 A/F | d2 A/F | t | h1 | L | R | Ø × t |
| 6,000 | 5,000 | 75 | 130 | 4 | 1,000 | 1,000 | 700 | 60.3 × 2.90 |
| 8,000 | 7,000 | 75 | 156 | 4 | 1,000 | 1,500 | 700 | 60.3 × 2.90 |
| 9,000 | 8,000 | 75 | 156 | 4 | 1,000 | 1,500 | 700 | 60.3 × 2.90 |
| 10,000 | 8,000 | 75 | 180 | 4 | 2,000 | 2,000 | 1,000 | 60.3 × 3.65 |
| 12,000 | 10,000 | 90 | 250 | 4 | 2,000 | 2,500 | 1,500 | 60.3 × 3.65 |
| 14,000 | 12,000 | 90 | 285 | 4 | 2,000 | 2,500 | 1,500 | 60.3 × 3.65 |

## 6-14 M · DOOR, BASE PLATE AND ANCHORS

| POLE | DOOR OPENING | | | BASE PLATE | | | | | ANCHOR BOLTS | |
|---|---|---|---|---|---|---|---|---|---|---|
| H | A | B | C | D | E | F | G | K | Size | Qty |
| 6,000 | 600 | 400 | 100 | 400 | 300 | 22 | 35 | 10 | M18 × 400 | 4 |
| 8,000 | 600 | 400 | 100 | 400 | 300 | 28 | 45 | 15 | M24 × 500 | 4 |
| 9,000 | 600 | 400 | 100 | 400 | 300 | 28 | 45 | 15 | M24 × 500 | 4 |
| 10,000 | 600 | 400 | 100 | 400 | 300 | 28 | 45 | 15 | M24 × 500 | 4 |
| 12,000 | 600 | 500 | 120 | 400 | 300 | 32 | 50 | 20 | M27 × 700 | 4 |
| 14,000 | 600 | 500 | 120 | 400 | 350 | 32 | 50 | 20 | M27 × 700 | 4 |

Dimensions in mm. H = overall height, h = shaft height, t = wall thickness, h1 / L / R = bracket rise, outreach and bend radius, A = door height above ground, B × C = door size, D × E = base plate size and hole spacing, F × G = slot size, K = plate thickness.



— Octagonal shafts with flange plates

## 12–18 M · SHORT BRACKET

| POLE | | | | SHORT BRACKET | | | DOOR OPENING | | |
|---|---|---|---|---|---|---|---|---|---|
| H | d1 A/F | d2 A/F | t | h1 | L | Ø × t | A | B | C |
| **12,000** | **90** | **250** | **4** | **200** | **500** | **60.3 × 3.00** | **600** | **500** | **120** |
| **14,000** | **90** | **285** | **4** | **200** | **500** | **60.3 × 3.00** | **600** | **500** | **120** |
| 15,000* | 105 | 300 | 5 | 200 | 500 | 60.3 × 3.00 | 600 | 500 | 140 |
| 16,000* | 105 | 320 | 5 | 200 | 500 | 60.3 × 3.00 | 600 | 500 | 140 |
| 18,000* | 105 | 375 | 5 | 200 | 500 | 60.3 × 3.00 | 600 | 500 | 140 |

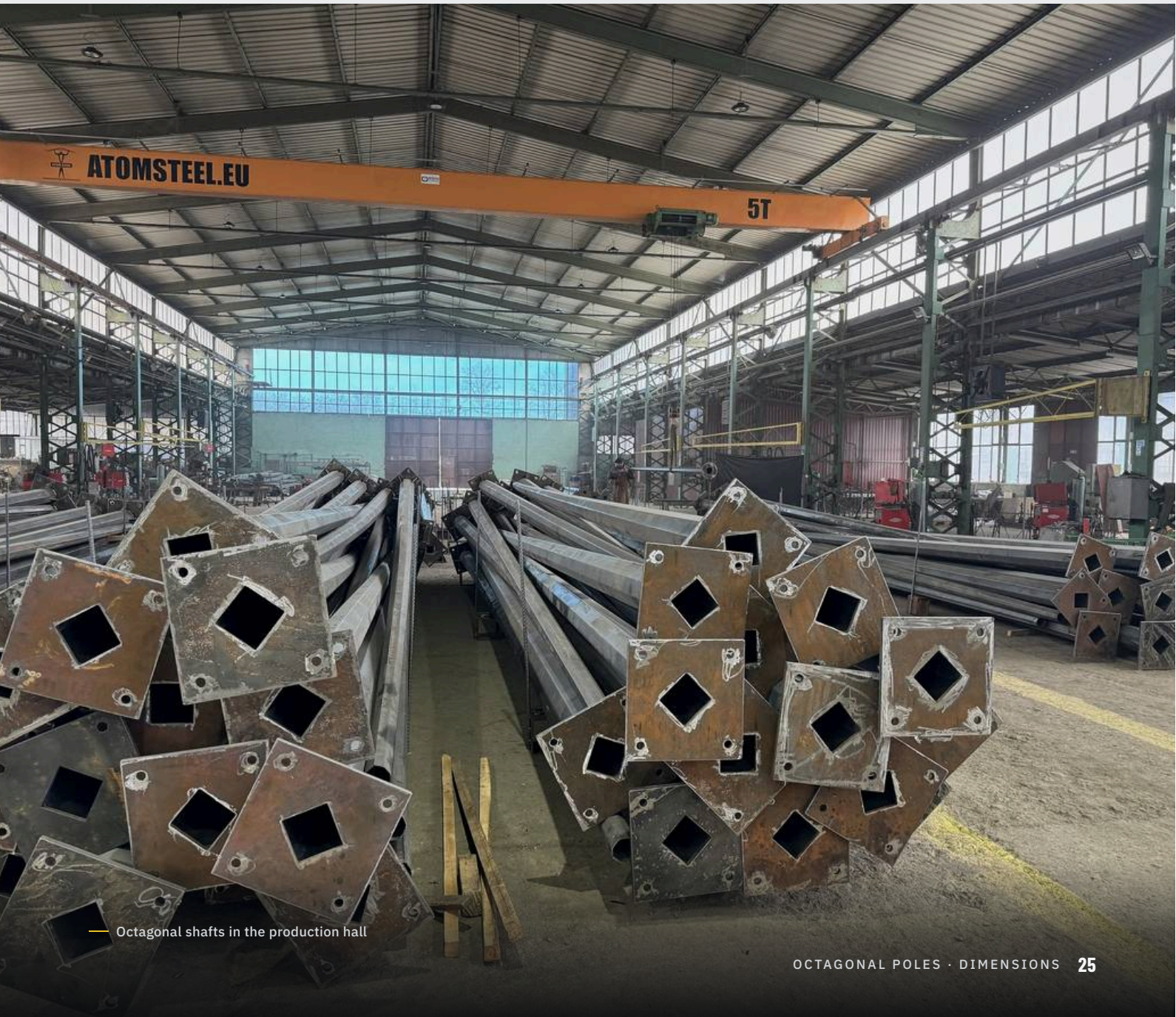
Dimensions in mm. H = overall height, h = shaft height, t = wall thickness, h1 / L / R = bracket rise, outreach and bend radius, A = door height above ground, B × C = door size, D × E = base plate size and hole spacing, F × G = slot size, K = plate thickness. * 15–18 m on request: 5 mm wall, two-segment shaft — joint and base details confirmed per project.

### STANDARD RANGE

6 to 14 m with 4 mm wall is the standard range, verified to EN 40-3 for each project site.

### ON REQUEST

15 to 18 m poles are built with 5 mm wall and a two-segment shaft; joint and base details are confirmed for each project.

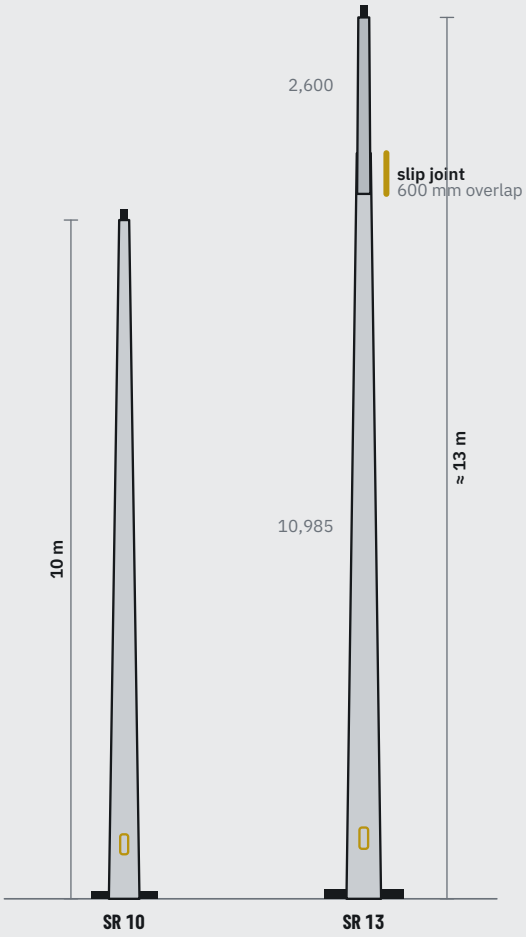



Octagonal shafts in the production hall

CERTIFIED TYPES

# SR 10 AND SR 13 TO EN 40-5

Two octagonal column types are type-tested to EN 40 and covered by a certificate of constancy of performance issued by a notified body.




| SR 10 | |
|---|---|
| HEIGHT | 10 m · one-piece octagonal shaft |
| WALL | 4 mm · steel S235JR |
| BASE PLATE | 400 × 400 × 12 mm |
| TOP | spigot Ø60.3 mm |
| MASS | approx. 164 kg (drawing) |

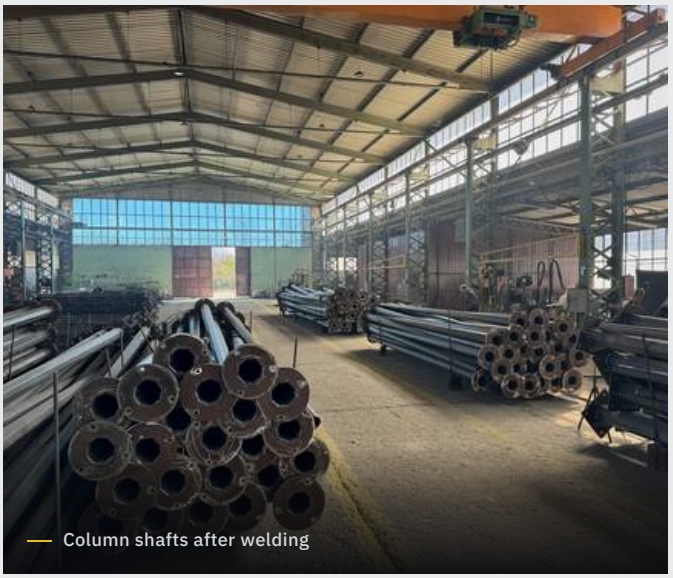
| SR 13 | |
|---|---|
| HEIGHT | approx. 13 m · two segments, 600 mm slip joint |
| WALL | 4 mm · steel S235JR |
| BASE PLATE | 495 × 495 × 15 mm |
| TOP | spigot Ø88.9 mm |
| MASS | approx. 280 kg (drawing) |

### CERTIFICATION

EN 40-5 certificate of constancy of performance 1017-CPR-15.585.895 (system 1) · TÜV SÜD Czech, Notified Body 1017. Type tests to EN 40-2, EN 40-3-1, -3-2, -3-3 and EN 40-5 · GIM-TEST, Banja Luka, 2023.

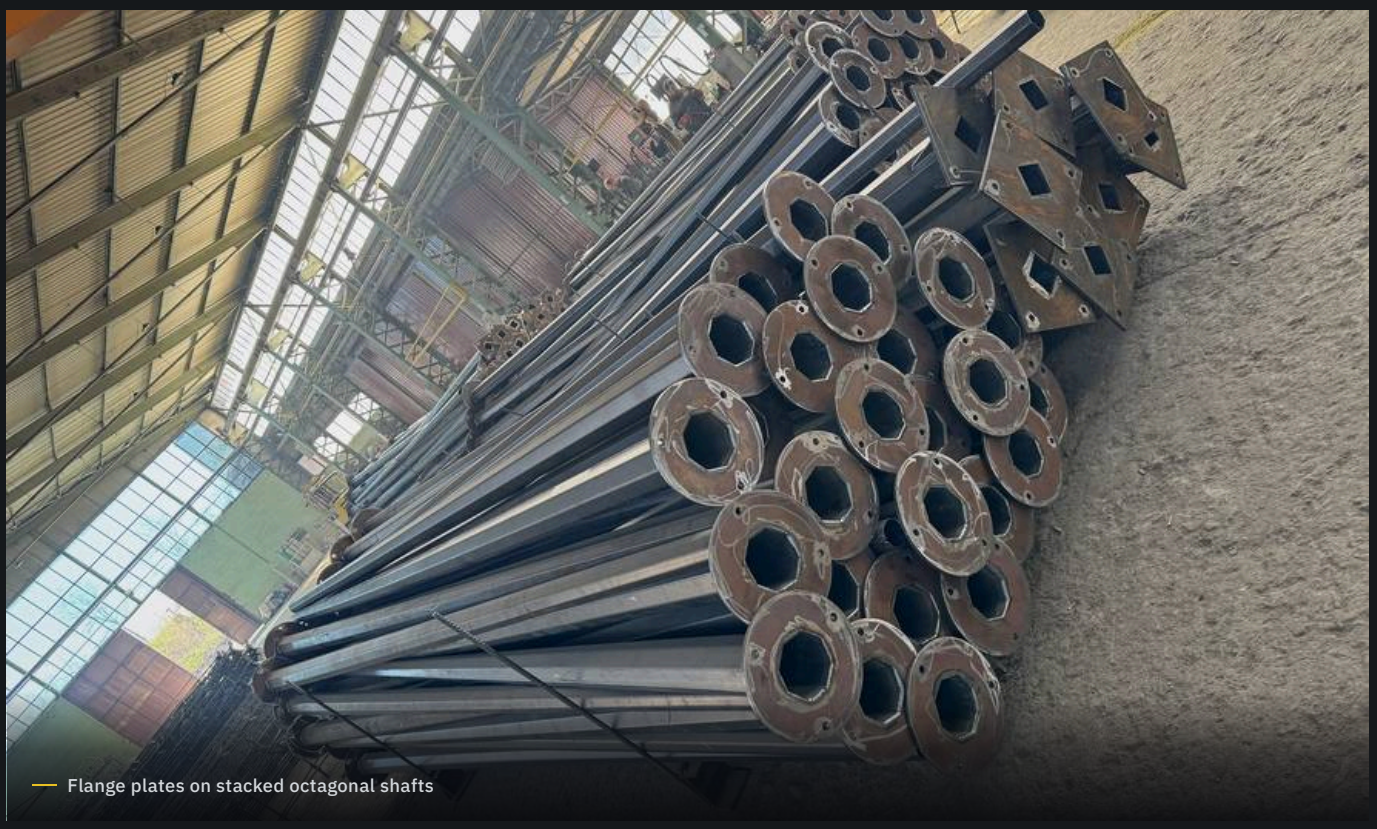
The certificate covers the types SR 10 and SR 13. All other octagonal poles are verified to EN 40-3 for each project.


Octagonal columns with base plates

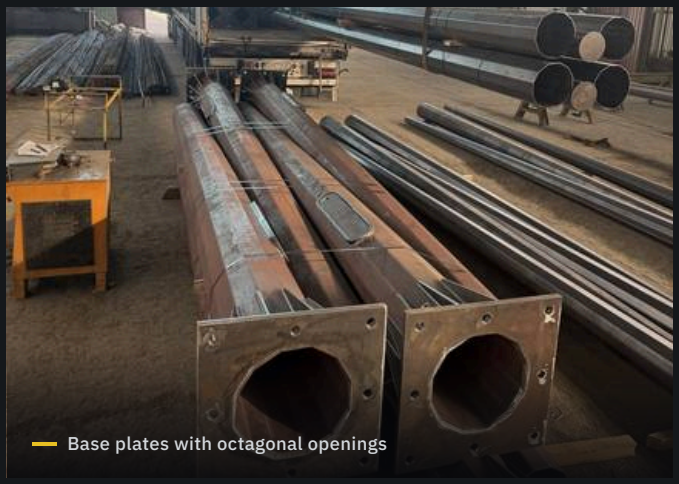

Column shafts after welding

IN PRODUCTION

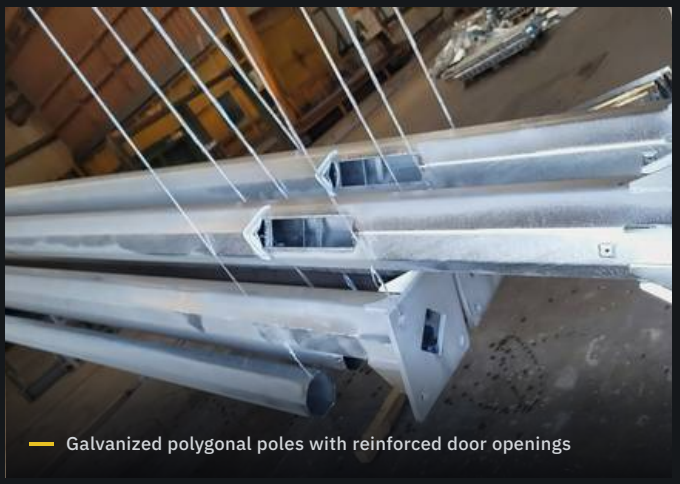
# OCTAGONAL POLES



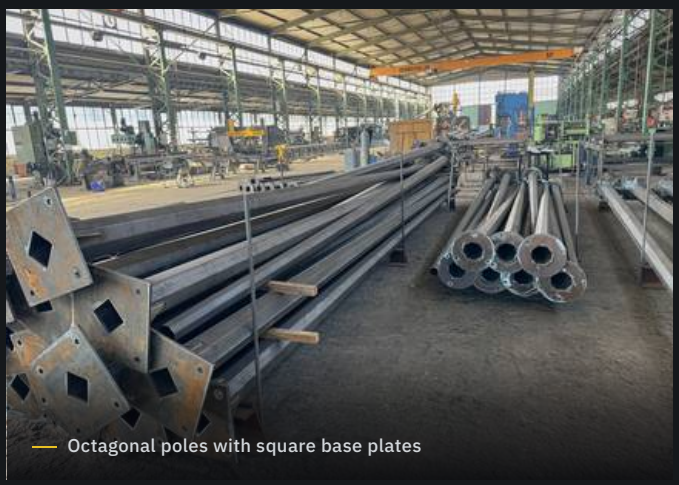
— Flange plates on stacked octagonal shafts



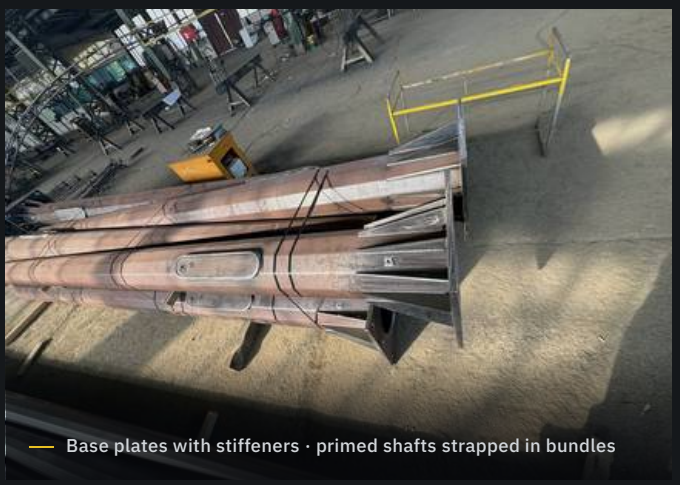
— Base plates with octagonal openings



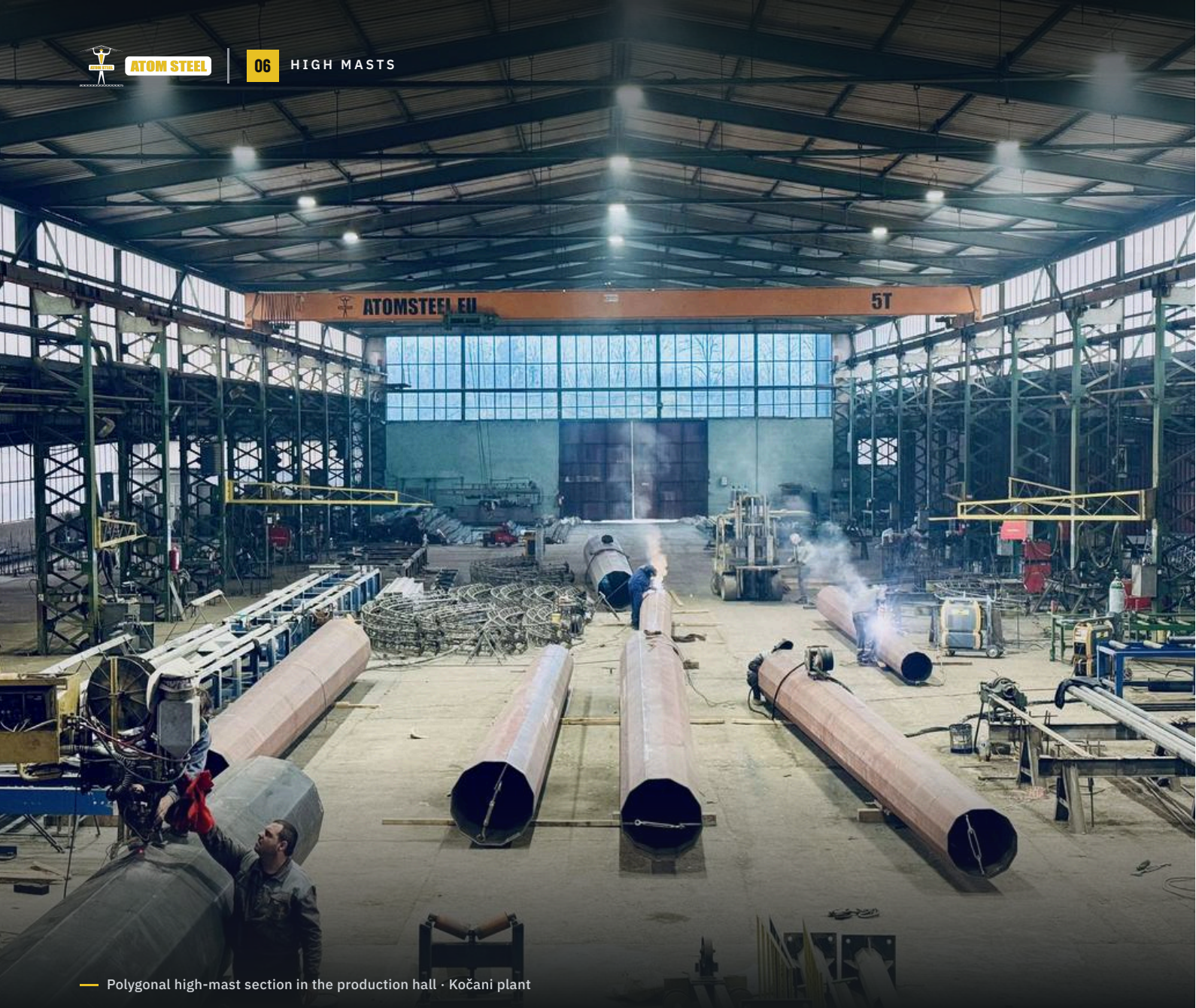
— Galvanized polygonal poles with reinforced door openings



— Octagonal poles with square base plates



— Base plates with stiffeners · primed shafts strapped in bundles




Polygonal high-mast section in the production hall · Kočani plant

PROJECT-ENGINEERED

# HIGH MASTS

Multi-section polygonal masts for stadiums, sports grounds, ports, airports, motorway interchanges and large industrial areas — engineered to the structural design for each site and fabricated in our own plant.

**30 m**
stadium mast reference
documented project example

**≈ 12 m**
sections · slip-jointed

**SAW**
longitudinal seams

**EXC3**
certified execution class · EN 1090-2

HIGH MASTS / PROJECT EXPERIENCE

# HIGH MAST PROJECTS
## ENGINEERING & FABRICATION

Project-specific polygonal high masts, from structural design inputs and shop drawings to formed sections, welded seams, inspection, finishing and dispatch.

**STADIUM REFERENCE**
**30 m**
Documented polygonal mast design and fabrication example.

**MANUFACTURING CAPABILITY**
**12 m**
Long press-formed sections, SAW seams and slip joints.

**PROJECT DESIGN STUDY**
**40 m**
Four-section drawing example. Not a confirmed delivery reference.

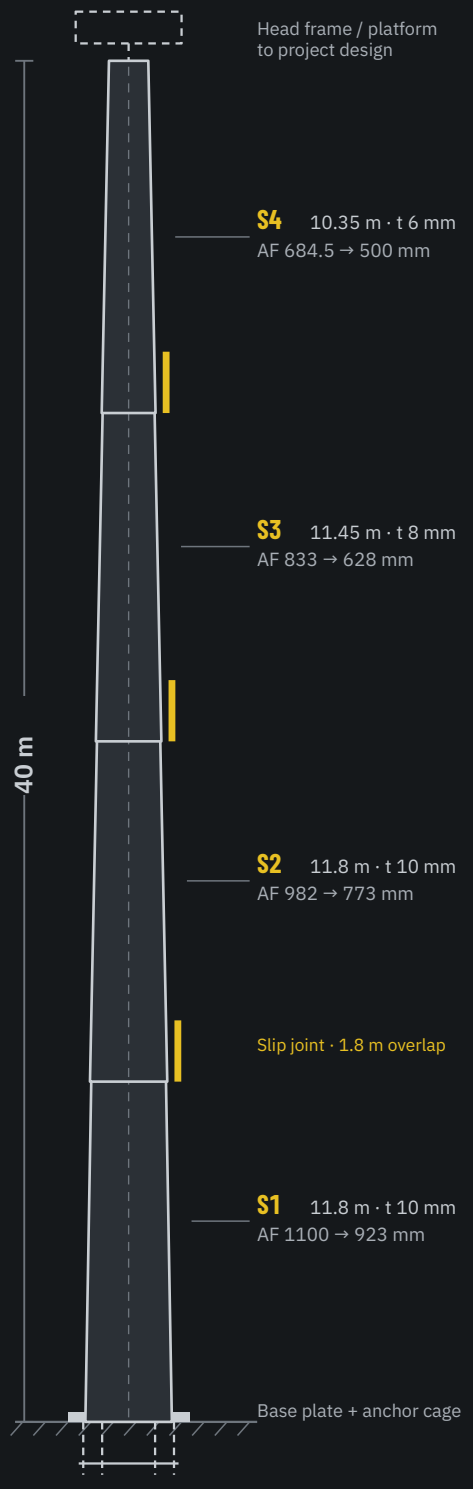



— Mast sections on the trailer before dispatch · Kočani plant

- Stadiums & sports grounds
- Ports & terminals
- Airports & aprons
- Motorway interchanges
- Industrial & logistics yards
- Area floodlighting

ENGINEERED IN SECTIONS

# FROM 12 M SECTIONS TO A 40 M MAST




**DRAWING-BASED DESIGN STUDY · NOT DELIVERED**

| | |
|---|---|
| SHAFT | Tapered polygonal sections from two press-braked halves, closed by two longitudinal SAW seams |
| SECTIONS | Up to approx. 12 m per piece, joined by slip joints (overlap per design) |
| BASE | Flange base plate with anchor cage, to the structural design |
| HEAD & ACCESS | Floodlight frame or headframe, platform and ladder to project specification |
| DESIGN BASIS | Eurocode — EN 1991-1-4 wind actions, EN 1993-3-1 masts (above 20 m outside the scope of EN 40) |
| FABRICATION | EN 1090-2 — execution class per design, certified up to EXC3 · welding to EN ISO 3834-2 |
| FINISH | Hot-dip galvanized to EN ISO 1461 at approved partner plants |

Reference configuration: 40 m four-section mast, Kosovo 2025–26 (project drawing). Each mast is designed for its site; schematic, not to scale in width.



Polygonal mast section — end view · July 2025

REFERENCE CONFIGURATION

# 40 M MAST IN FOUR SECTIONS

DESIGN STUDY · NO DELIVERY CLAIM

| Section | Length (m) | Across flats, base → top (mm) | Plate (mm) |
|---|---|---|---|
| **S4 · top** | 10.35 | 684.5 → 500 | 6 |
| **S3** | 11.45 | 833 → 628 | 8 |
| **S2** | 11.80 | 982 → 773 | 10 |
| **S1 · base** | 11.80 | 1,100 → 923 | 10 |

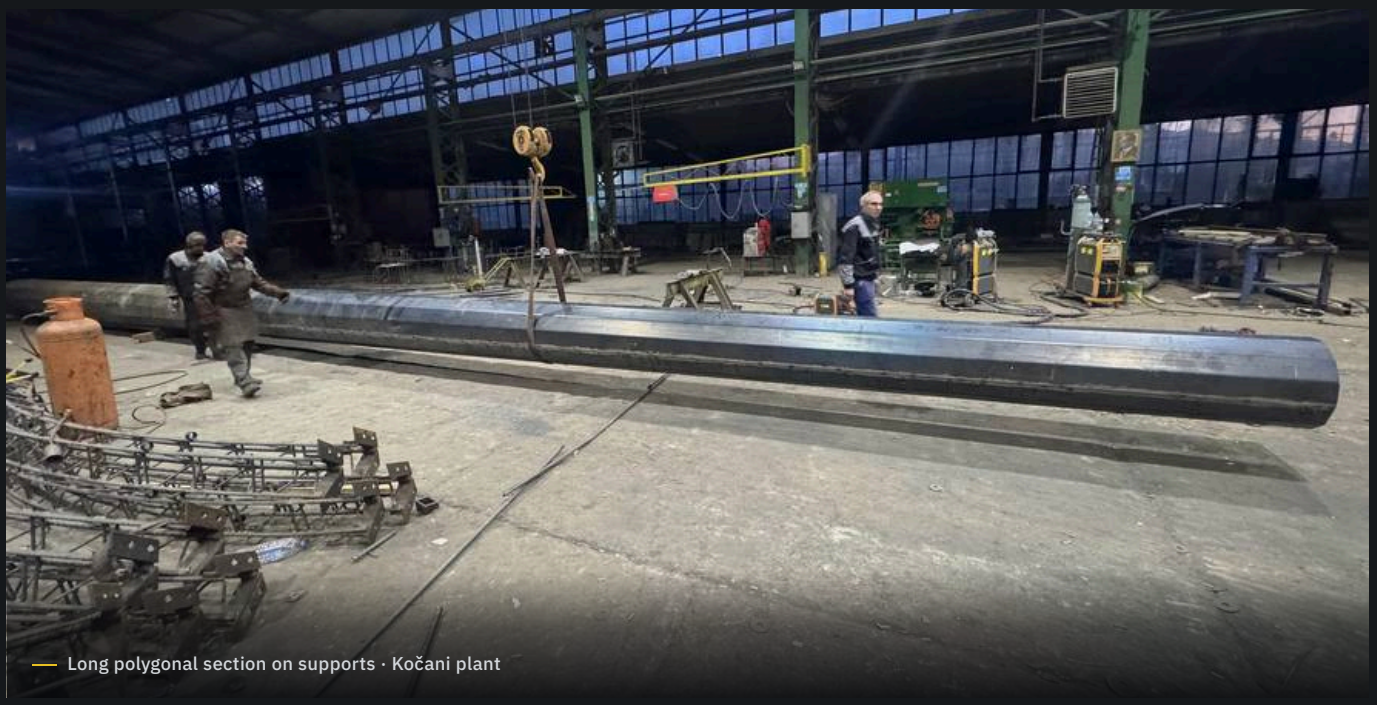
Three slip joints with 1.8 m overlap each · overall height 40.0 m · values from the project drawing (Kosovo, 2025–26). Not a standard range: every mast is designed for its site.

**4**
sections of up to 11.8 m

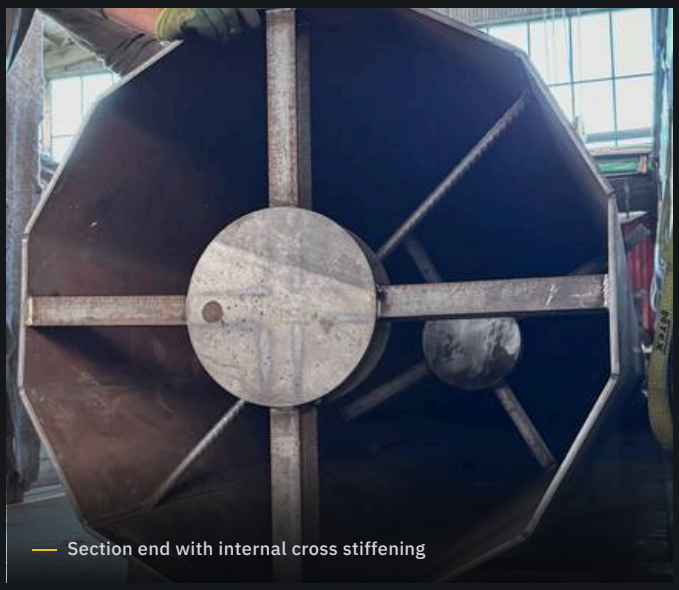
**3 × 1.8 m**
slip-joint overlaps

**1,100 mm**
base size across flats

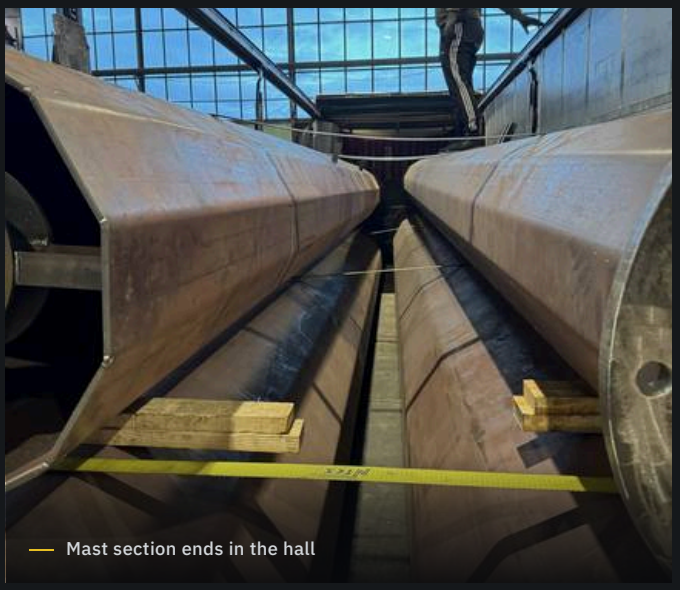
**10 → 6 mm**
plate, base to top



— Long polygonal section on supports · Kočani plant



— Section end with internal cross stiffening



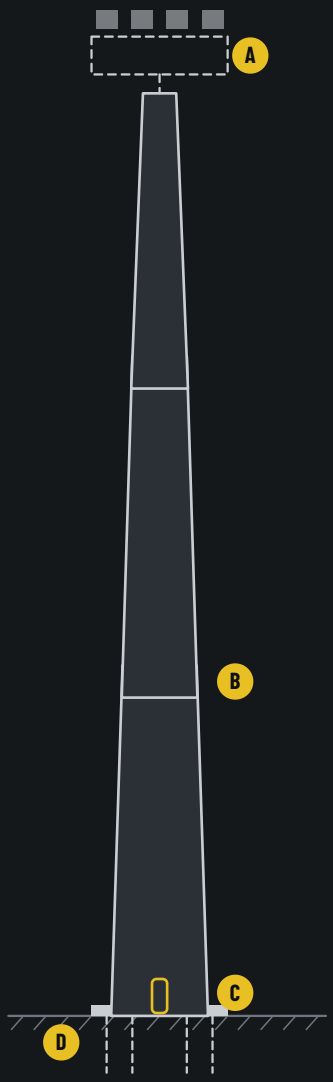
— Mast section ends in the hall

CONFIGURATIONS & INTERFACES

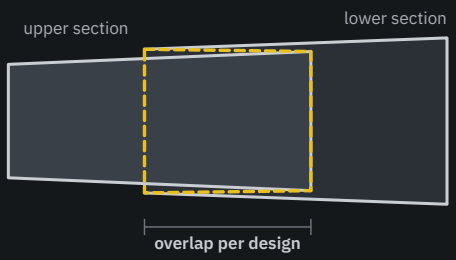
# DESIGNED FOR EACH SITE

Every high mast is designed for its location, height and lighting equipment. Head, joints, access and base are agreed with the client and detailed in the project drawings.

**DESIGN PRINCIPLES · SITE-SPECIFIC VERIFICATION**

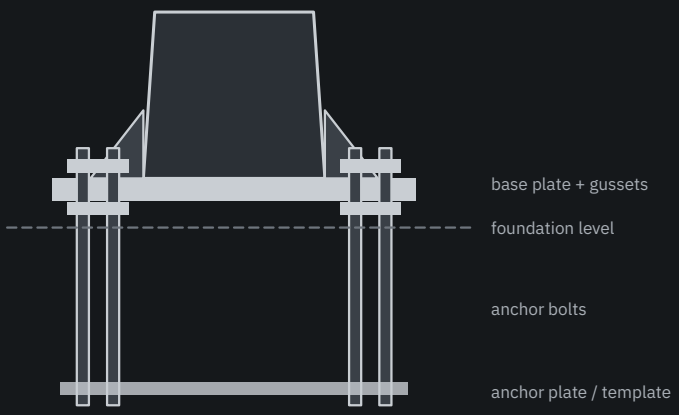



### B · SLIP JOINT




Sections are pushed together on site; no bolted shaft splices. 40 m reference: 3 joints × 1.8 m.

### D · BASE & ANCHOR CAGE




**A · HEAD — fixed head frame, floodlight frame or platform, to project design**

**C · ACCESS — base door with cover, cable entry, earthing; ladder and rest platforms where specified**

**D · number and size of anchor bolts per structural design**

#### DESIGN BASIS

High masts above 20 m are outside the scope of EN 40. They are designed to the Eurocodes — EN 1991-1-4 (wind actions) and EN 1993-3-1 (towers and masts) with the national annex of the site — or to the client's specification.

#### RESPONSIBILITY

Structural design by the client's engineer, or a project-specific design by licensed structural engineers on our behalf. Fabrication to EN 1090-2 — execution class per design, certified up to EXC3.

FROM RECENT PROJECT DRAWINGS

# JOINTS, SECTIONS AND BASES

| | |
|---|---|
| JOINTS | Slip joints — 40 m mast: three joints with 1.8 m overlap each |
| SECTIONS | Up to approx. 12 m per piece · 12-sided polygonal sections on the 40 m mast |
| WALLS | From 10 mm at the base to 6 mm at the top (40 m mast) |
| BASES | Thick base plates with gussets · anchor-bolt cage to the structural design |
| ACCESS | Platform and ladder on 30 m stadium masts (2023) |

Values are from project drawings, including a 40 m design study; not a delivery claim.

FOR YOUR ENQUIRY

# WHAT WE NEED TO DESIGN A HIGH MAST

- **Site** location, terrain category and wind basis (basic wind velocity, national annex)
- **Mast** height and number of masts
- **Lighting** number, mass and projected area of luminaires
- **Head** fixed head frame, floodlight frame or platform
- **Access** ladder, rest platforms, fall-arrest system
- **Electrical** door position, cable entry, earthing
- **Foundation** anchor cage and template supply, interface to the foundation design
- **Coating** hot-dip galvanizing, further systems if required
- **Delivery** address, unloading; erection by others unless agreed
- **Documents** static calculation, drawings and certificates required

TYPICAL SCOPE OF SUPPLY

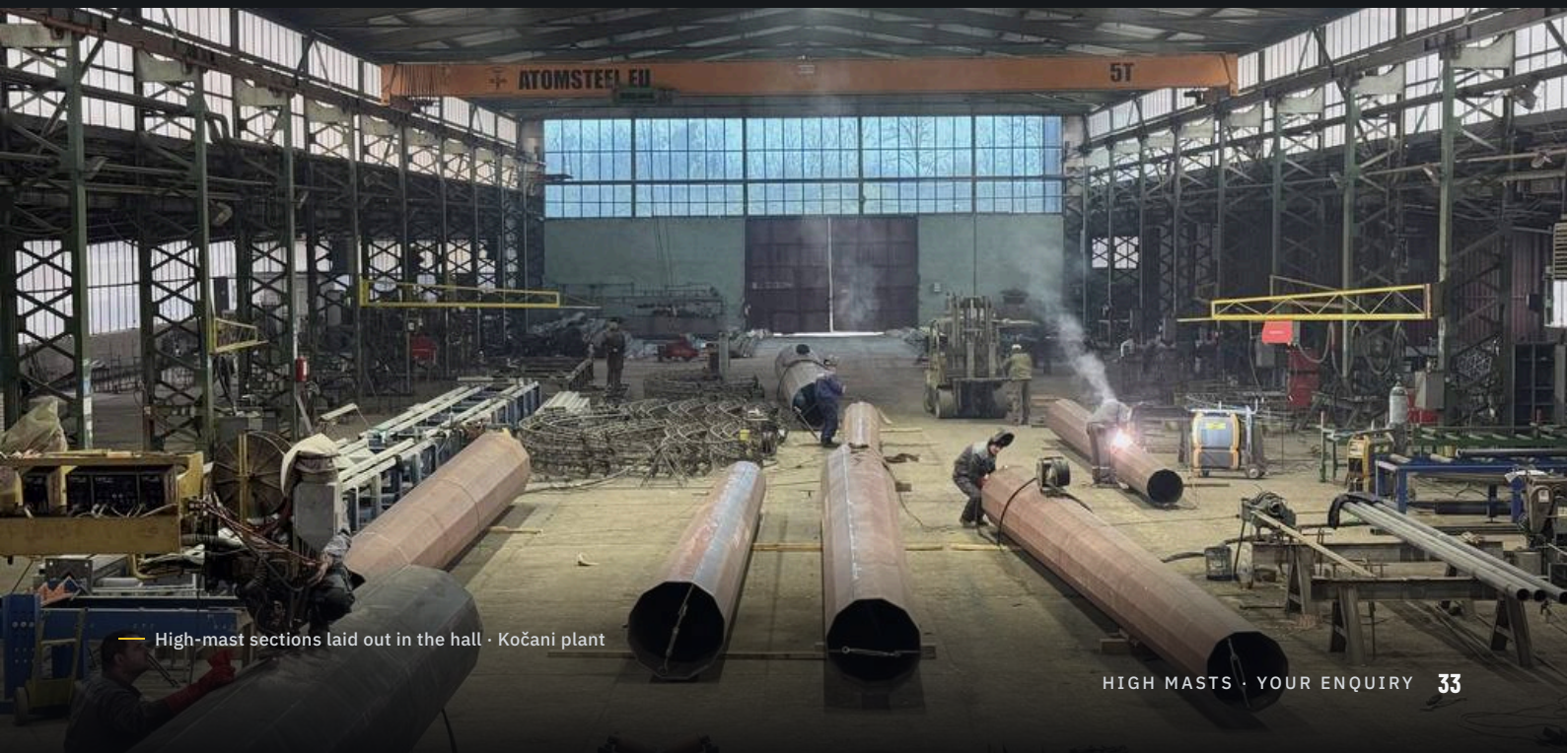
### Mast sections
Slip-jointed polygonal sections, marked for assembly, hot-dip galvanized.

### Base
Base plate with gussets, anchor-bolt cage with template, nuts and washers.

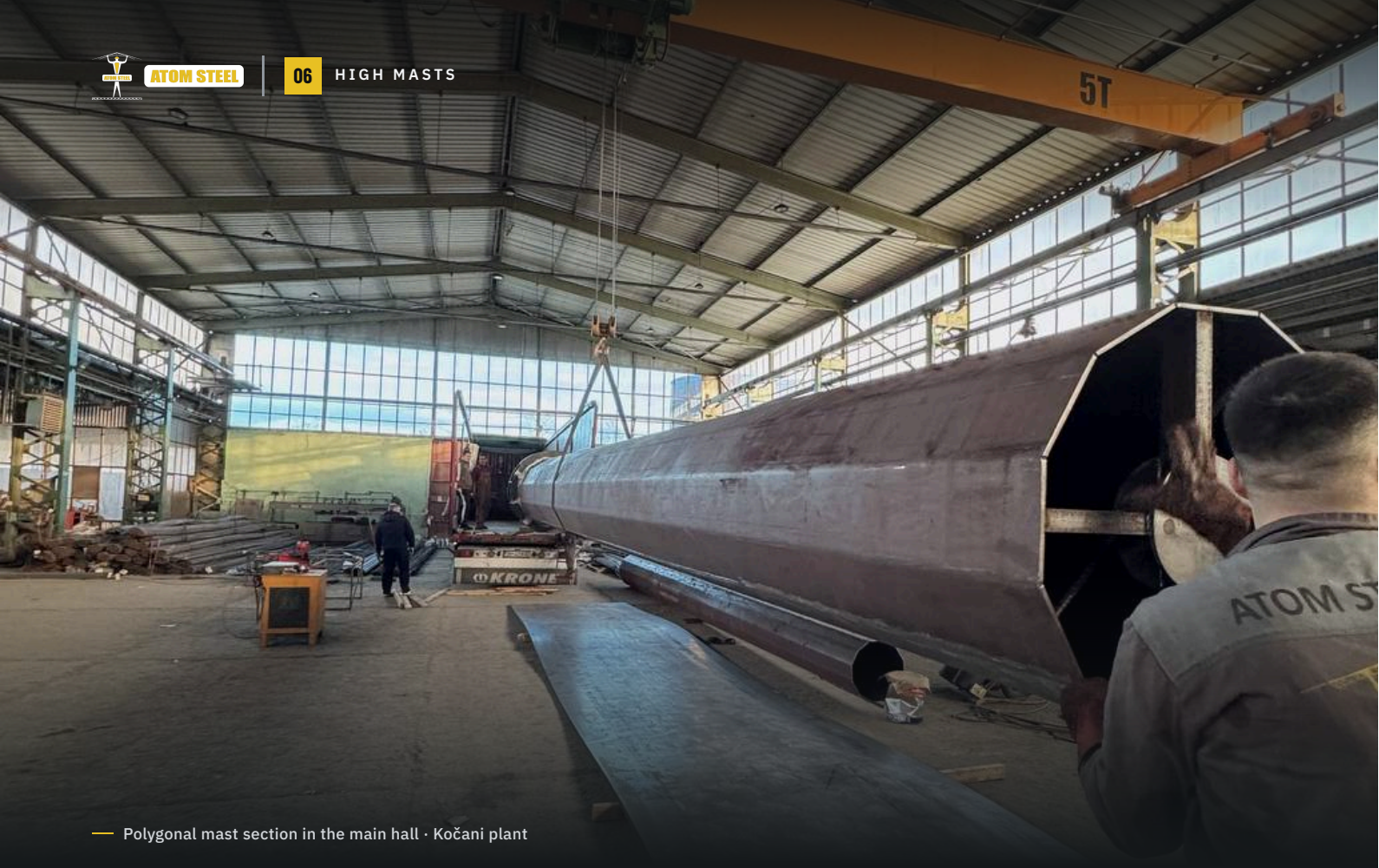
### Head & access
Head frame, platform and ladder as specified in the project design.

### Documents
Drawings, inspection and galvanizing records; calculation if in scope.

Luminaires, electrical equipment, foundations and erection are by others unless agreed in the order.




— High-mast sections laid out in the hall · Kočani plant




— Polygonal mast section in the main hall · Kočani plant

FABRICATION

# BUILT IN OUR OWN HALLS

Mast sections are cut, press-formed in two halves on the 12 m tandem press brake, closed by submerged-arc welding and checked dimensionally before galvanizing.

**01**
**CUT**
CNC plasma

**02**
**FORM**
12 m press brake

**03**
**WELD**
SAW seams

**04**
**CHECK**
VT / NDT · dimensions

**05**
**GALVANIZE**
partner plant

**06**
**DISPATCH**
marked sections



— Submerged-arc seam welding



— Section end, internal cross stiffening



— Manual welding of details

SECTIONS AND DISPATCH

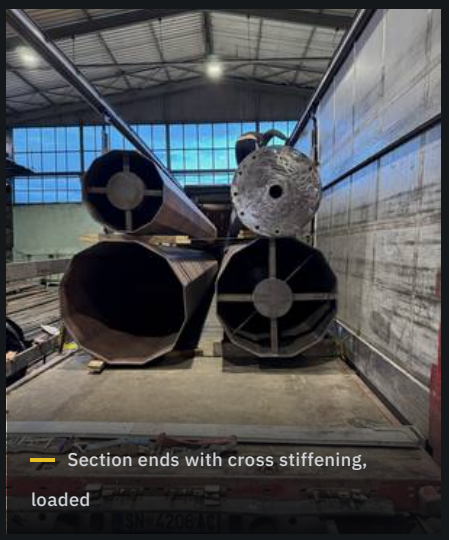
# FROM THE HALL TO THE SITE



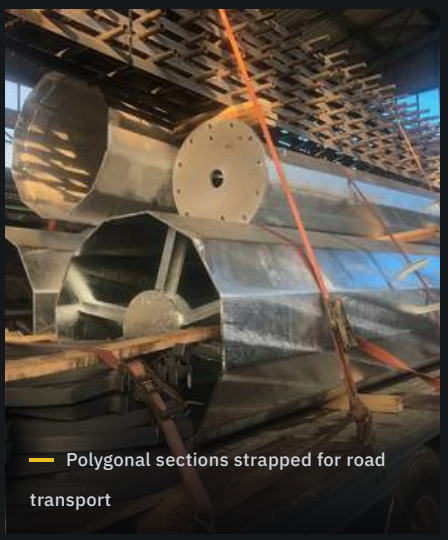
Mast sections loaded for dispatch · December 2025



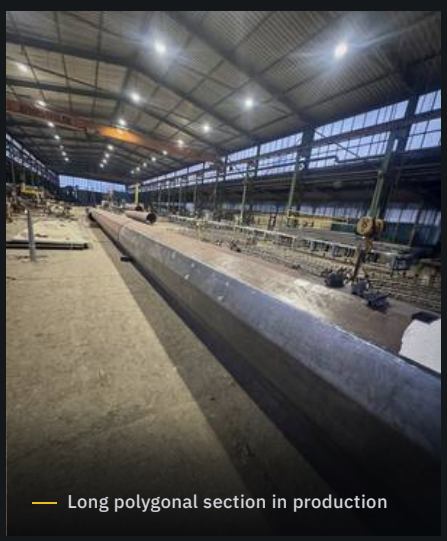
Mast sections secured on the trailer



Section ends with cross stiffening, loaded



Polygonal sections strapped for road transport



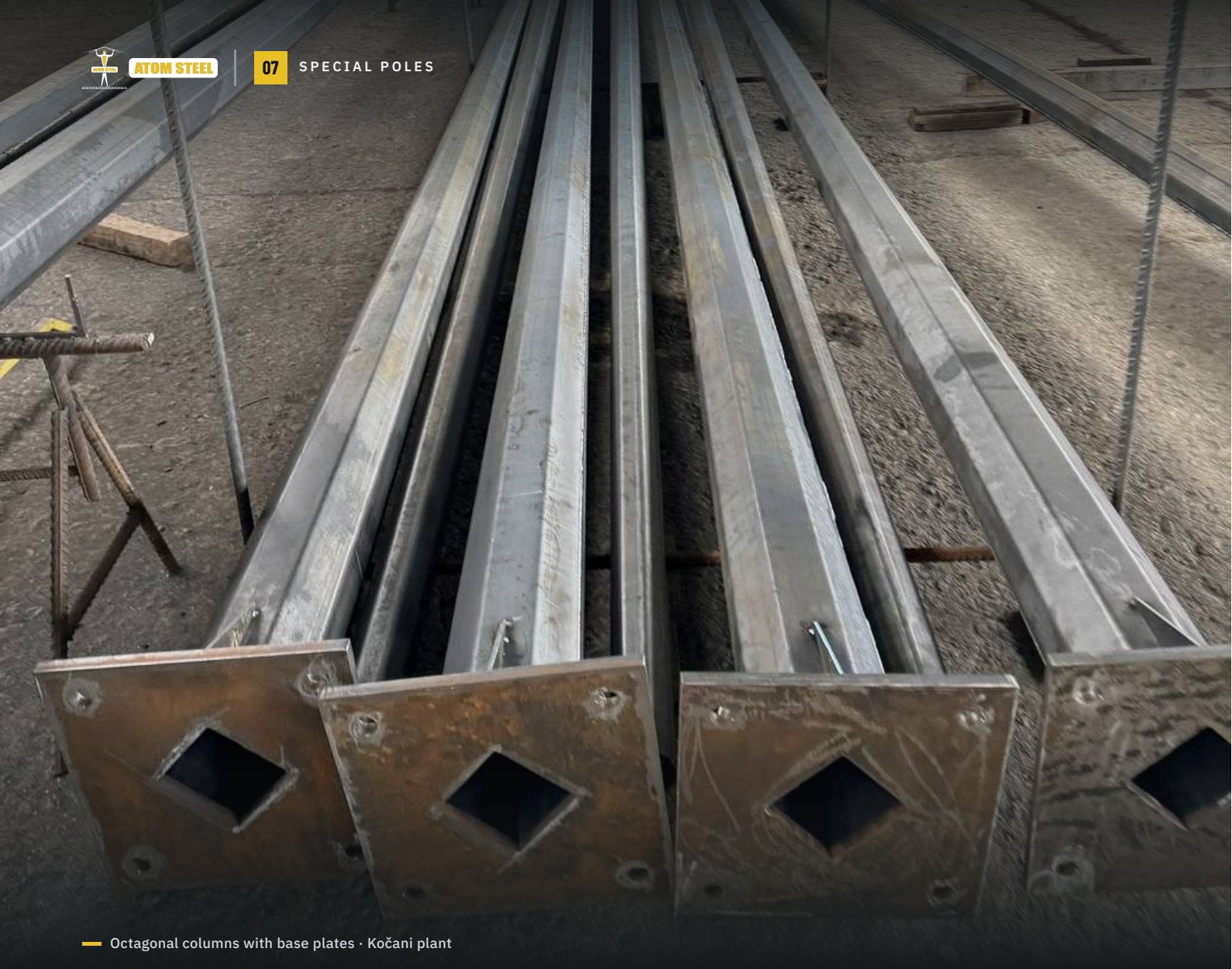
Long polygonal section in production



Mast base section with flange plate · July 2025



Galvanized sections ready for dispatch



Octagonal columns with base plates · Kočani plant

PROJECT-ENGINEERED

# FLOODLIGHT, CCTV & SPECIAL POLES

Poles with demanding loads or stiffness requirements are engineered to the project specification — with the same press forming, welding and quality system as our catalogue range.

CERTIFIED TYPES

### FLOODLIGHT COLUMNS

Octagonal columns with crossarm or head frame for sports grounds, yards and area lighting. Types SR 10 and SR 13 certified to EN 40-5 (page 26); other heights by project.

BY SPECIFICATION

### CCTV & CAMERA POLES

Stiff polygonal poles with camera arm or bracket, designed to the camera supplier’s limits for tilt and twist at the top.

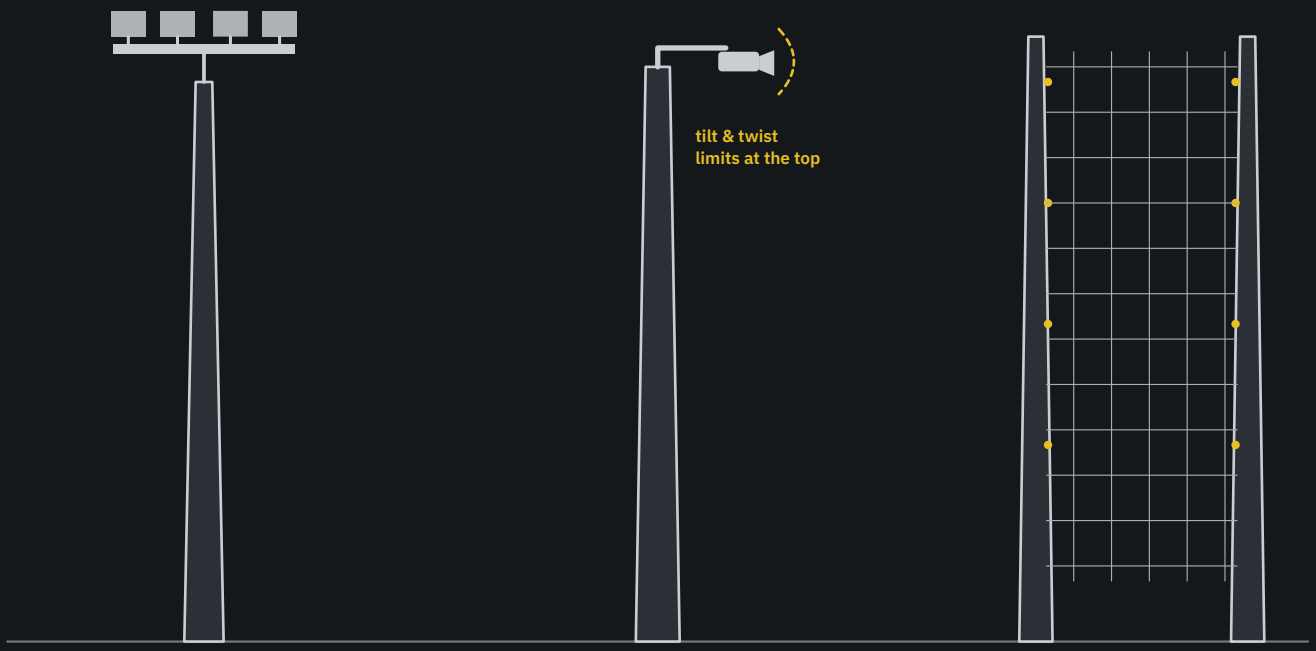
BY PROJECT

### SPORTS NETTING POLES

Tall poles for ball-stop and golf-range nets with net and cable fixings, designed for net and wind loads.

TYPICAL CONFIGURATIONS

# ENGINEERED TO THE LOAD CASE




### FLOODLIGHT COLUMNS · WE NEED

- ✓ Height and number of luminaires
- ✓ Mass and projected area of luminaires and crossarm
- ✓ Crossarm or head-frame layout
- ✓ Site and wind basis

### CCTV & CAMERA POLES · WE NEED

- ✓ Camera type, mass and mounting height
- ✓ Permitted tilt and twist at the top
- ✓ Arm or bracket length, cable routing
- ✓ Cabinets or equipment on the pole

### SPORTS NETTING POLES · WE NEED

- ✓ Net height, panel length and mesh
- ✓ Cable layout and pre-tension
- ✓ Spacing of the poles
- ✓ Site and wind basis

**Status.** Certified types are documented products. Poles marked “by specification” or “by project” are engineered and quoted for each enquiry — design inputs and approval are agreed before production.



— Slender shafts with spigot tops

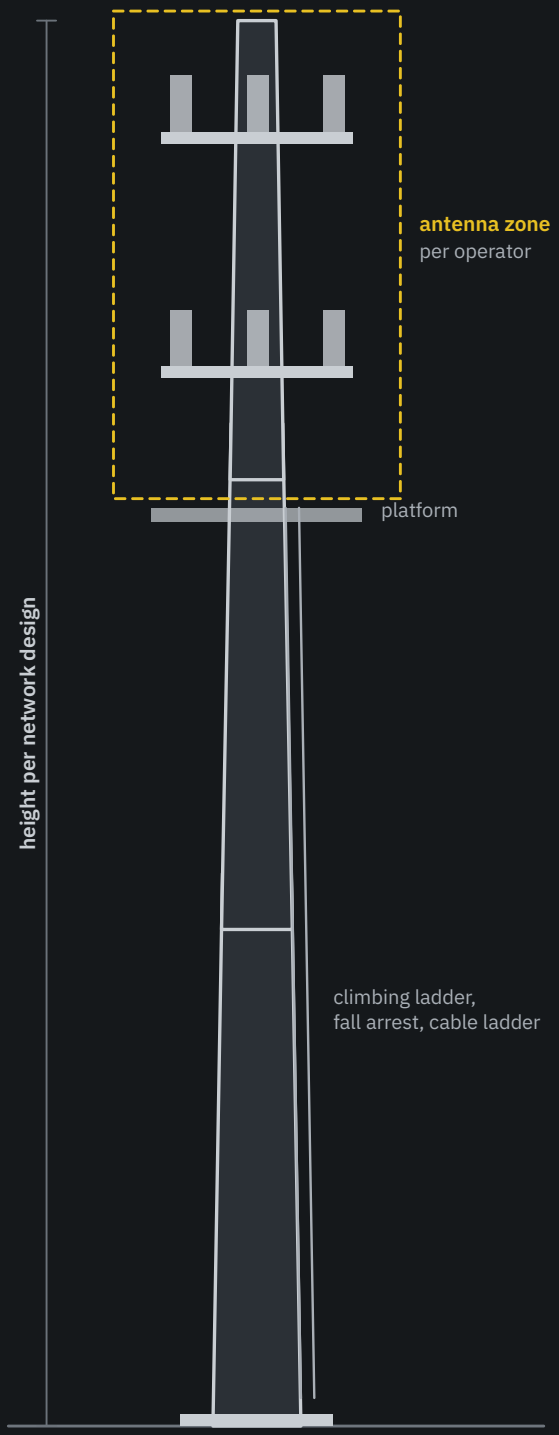


— Hot-dip galvanized columns and fittings before dispatch

DEVELOPMENT PROGRAMME

# TELECOM MONOPOLES

Polygonal steel monopoles for mobile and radio networks — engineered for antenna loads, access systems and the operator's deflection limits.




### TYPICAL SCOPE

- **Shaft** polygonal, slip-jointed sections of up to approx. 12 m
- **Antennas** supports and platform to the operator's layout
- **Access** climbing ladder with fall-arrest system, cable ladder
- **Base** base plate with anchor-bolt cage
- **Finish** hot-dip galvanized to EN ISO 1461

### DESIGN BASIS

EN 1993-3-1 and EN 1991-1-4 with the national annex; ice loads where applicable; tilt and twist limits as required by the operator.

### FOR AN OFFER WE NEED

Height, antenna list with areas and masses, equipment loads, deflection criteria, site wind and ice data, access requirements.

### PROGRAMME STATUS

Offered by project, with structural design by partner engineers and a pilot agreed with the client. No standard range.

### PRODUCTION BASIS

**≈ 12 m**
sections from the tandem press brake

**SAW**
longitudinal seams

**30 m**
stadium mast reference

PROJECT DESIGN · 2025

# 25 M POLYGONAL POLE IN THREE SECTIONS

| | |
|---|---|
| HEIGHT | 25.0 m · polygonal shaft · steel S355 |
| SECTIONS | Three slip-jointed sections · 8.56 m · 8.00 m · 10.04 m |
| SLIP JOINTS | Two joints with 800 mm overlap each |
| ACROSS FLATS | 300 mm at the top → 700 mm at the base |
| PLATE | 6 mm · 8 mm · 10 mm, top to base |
| BASE | Base plate Ø950 × 45 mm with stiffeners · anchor bolts with template |
| DOOR | Reinforced opening, 1,100 mm high, 500 mm above the base plate |

Project design from 2025 for a 25 m polygonal pole — shown as an example of the engineering behind a monopole project. Not a standard product: every monopole is designed for its site and loads.



Dimensional check on a polygonal section

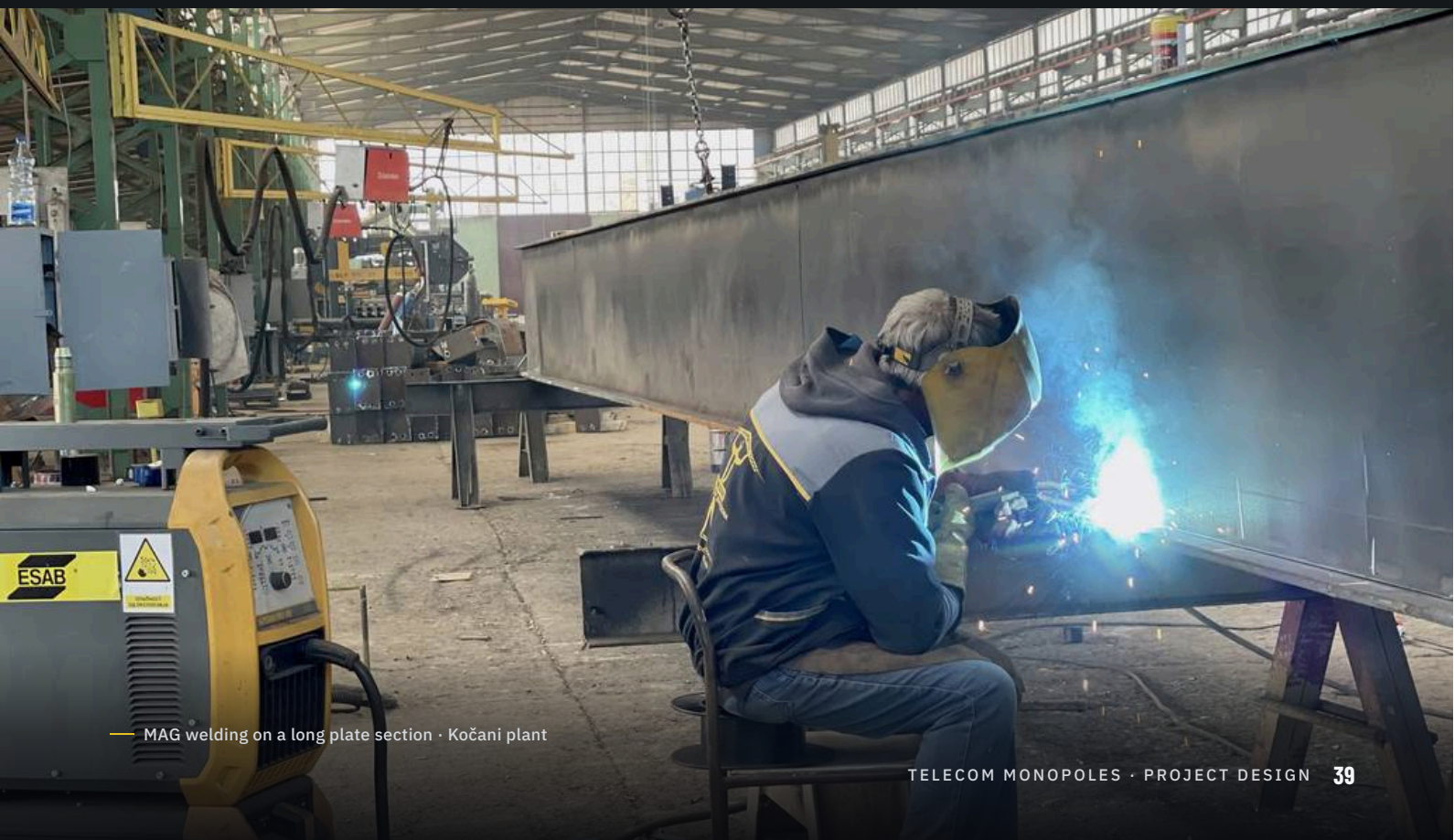
HOW A MONOPOLE PROJECT RUNS

**01**
### REQUIREMENT REVIEW
Antenna loads, deflection limits and access requirements reviewed with the operator.

**02**
### STRUCTURAL DESIGN
Project design by partner structural engineers to EN 1993-3-1.

**03**
### PILOT STRUCTURE
Fabrication and inspection of a pilot structure in Kočani.

**04**
### SERIES PRODUCTION
After pilot approval, with full inspection documentation.




MAG welding on a long plate section · Kočani plant



Concept: polygonal monopole line in an industrial corridor

3D MODEL · CONCEPT

DEVELOPMENT PROGRAMME

# POWER TRANSMISSION MONOPOLES

Polygonal steel monopoles for 110 kV to 220 kV overhead lines — a development programme built on our 12 m press forming, seam welding and slip-jointed construction.

THE STRUCTURE

## ONE SHAFT INSTEAD OF A LATTICE

A polygonal monopole carries the same conductors as a lattice tower on one tapered steel shaft. The shaft is made in sections up to 12 m long, bent from plate on a press brake, seam-welded, hot-dip galvanized and joined on site by slip joints.

**3 + 6**
shaft sections and crossarms on a 110 kV suspension structure, against 356 members and 1,232 bolts on the lattice tower

**≈ 22 m²**
land permanently occupied, against about 74 m² for the lattice tower (base and a 1.5 m margin)

**3 lifts**
for the shaft with an ordinary mobile crane; no welding and no bolting of the shaft at height

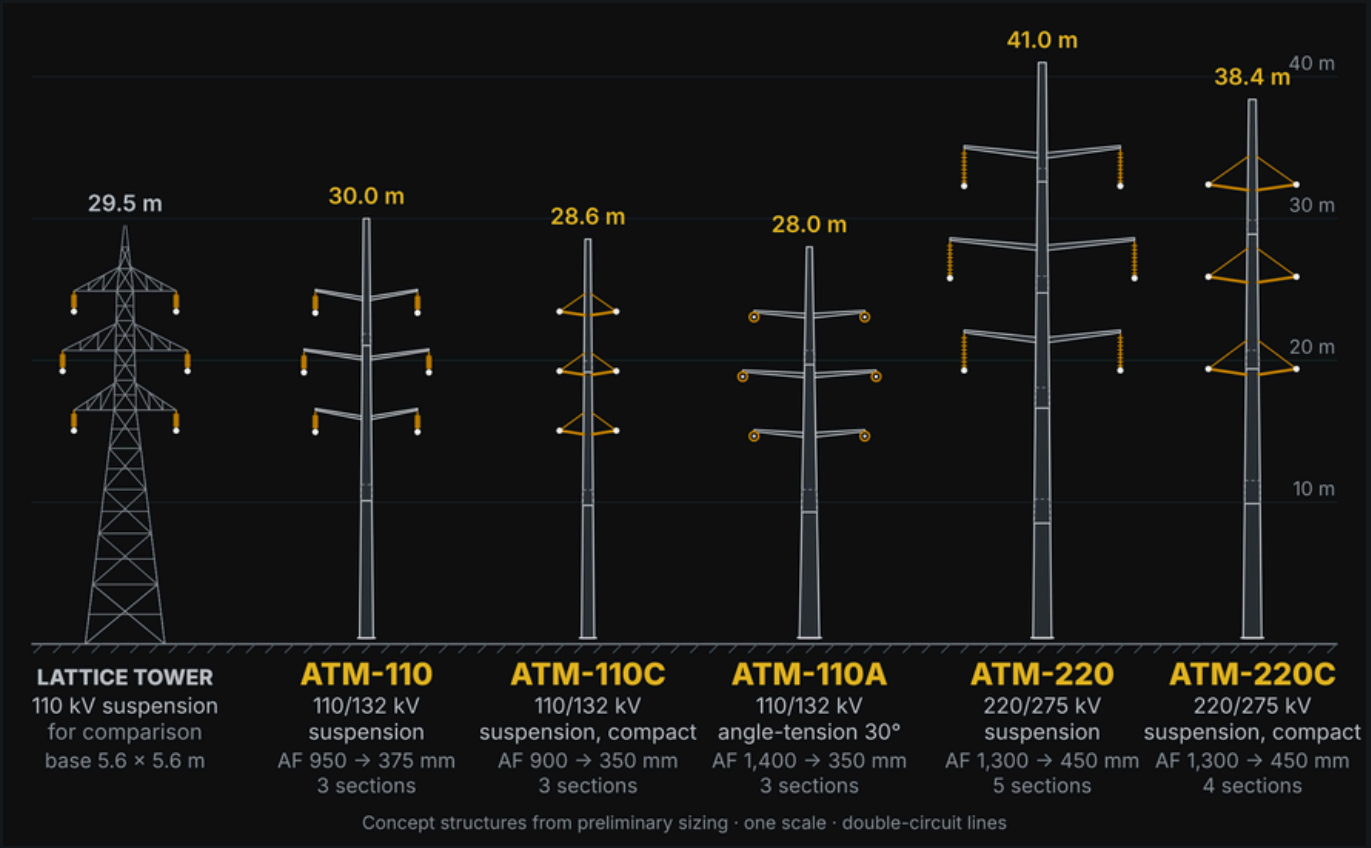
DESIGN FEATURES

- 12-sided tapered shaft in S355J2, plate 6 to 10 mm
- Slip joints with a lap of 1.5 × the shaft diameter, trial-assembled in the factory
- Base plate with anchor cage and setting templates
- 8-sided tapered steel crossarms, or brackets for insulated crossarms
- Step bolts, fall-arrest and earthing provisions to the client's standard
- Hot-dip galvanized to EN ISO 1461; additional paint system by agreement

PRODUCT RANGE

# THE ATM FAMILY

Five concept structures for double-circuit lines, shown at one scale with a lattice tower for comparison. C = compact version with insulated crossarms. A = angle-tension structure.




| | ATM-110 | ATM-110C | ATM-110A | ATM-220 | ATM-220C |
|---|---|---|---|---|---|
| **Duty** | 110/132 kV suspension | 110/132 kV suspension, compact | 110/132 kV angle-tension 30° | 220/275 kV suspension | 220/275 kV suspension, compact |
| **Height above ground** | 30.0 m | 28.6 m | 28.0 m | 41.0 m | 38.4 m |
| **Shaft across flats, base → top** | 950 → 375 mm | 900 → 350 mm | 1,400 → 350 mm | 1,300 → 450 mm | 1,300 → 450 mm |
| **Sections** | 3 | 3 | 3 | 5 | 4 |
| **Section lengths** | 10.8 · 11.8 · 8.9 m | 10.5 · 10.2 · 9.4 m | 10.5 · 11.4 · 8.3 m | 9.8 · 9.6 · 9.3 · 8.8 · 8.4 m | 11.1 · 10.8 · 10.5 · 9.5 m |
| **Plate** | 8 / 6 / 6 mm | 8 / 6 / 6 mm | 10 / 10 / 6 mm | 10 / 10 / 8 / 6 / 6 mm | 10 / 8 / 6 / 6 mm |
| **Anchor bolts** | 16 × M36 | 16 × M36 | 24 × M42 | 24 × M36 | 24 × M36 |
| **Heaviest piece** | 2.3 t | 2.1 t | 4.0 t | 3.7 t | 4.1 t |
| **Conductor supports** | 6 steel crossarms | 6 braced post insulators | 6 steel crossarms, tension sets | 6 steel crossarms | 6 braced post insulators |

Basis: span 300 m with conductor 243-AL1/39 (110 kV) and 350 m with 490-AL1/64 (220 kV); steel S355J2; preliminary sizing in the format of EN 50341-1. Concept values, not a design.

Concept values from preliminary sizing. Every structure is designed for the line by an authorised designer. Not an offer.

APPLICATION

# WHERE A MONOPOLE FITS

### WHERE IT FITS

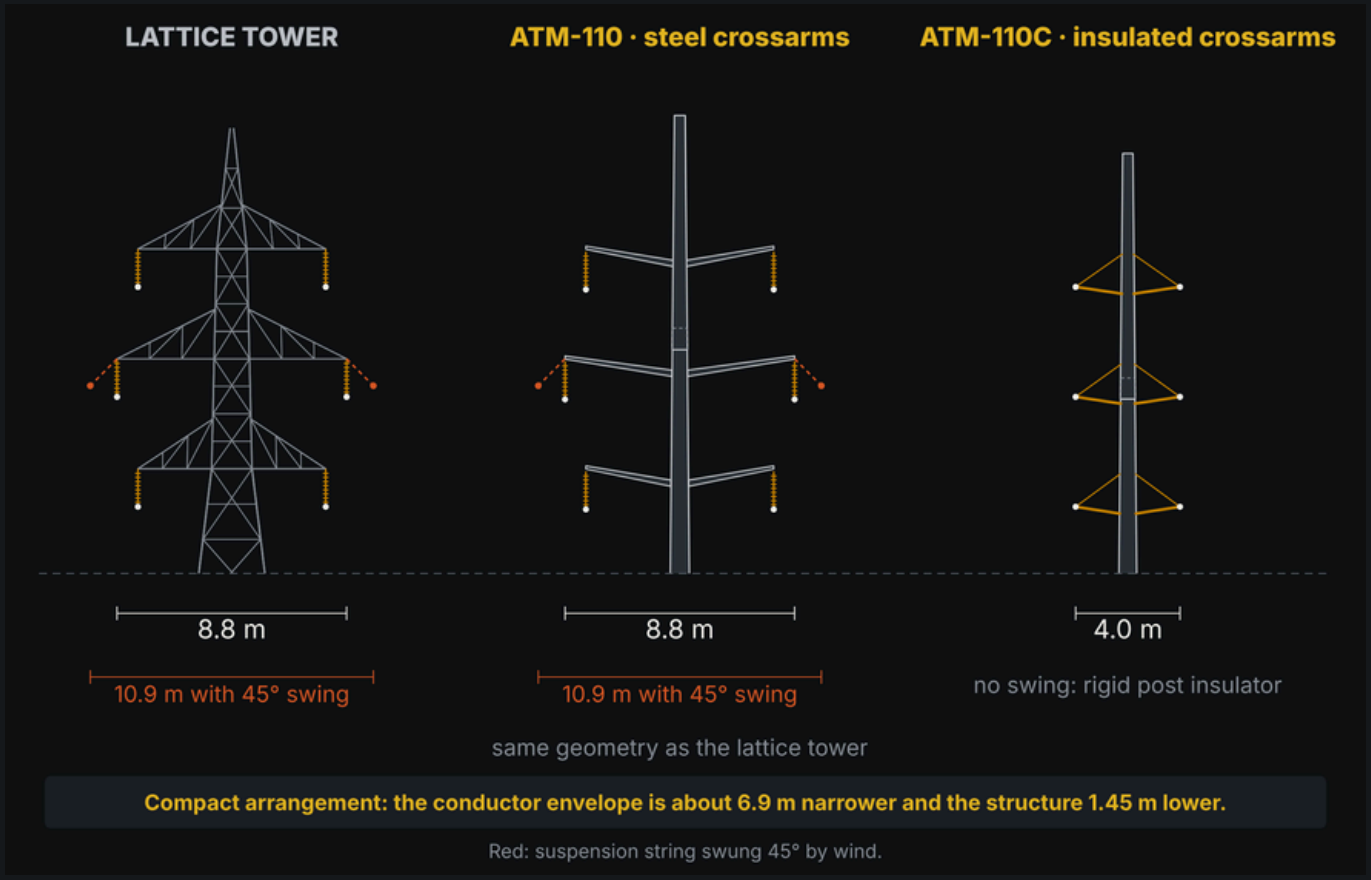
- Existing corridors and rebuilds, where the structure must stand on a small plot
- Industrial zones, roads and railways, where every day of site occupation costs money
- Substation entries and line terminations
- Urban and suburban 110 kV lines, with the compact version
- Places where appearance and public acceptance decide

### WHERE A LATTICE TOWER REMAINS THE BETTER CHOICE

- Open land where land and construction time carry no price
- Mountain terrain without crane and truck access
- Large line angles with very high loads
- Projects decided on the lowest price of the structure alone

COMPACT VERSION

# A NARROWER CORRIDOR NEEDS A COMPACT CONDUCTOR ARRANGEMENT




### ON ITS OWN, A MONOPOLE DOES NOT NARROW THE CORRIDOR

With steel crossarms the conductors sit where they sit on the lattice tower. That makes the ATM-110 a like-for-like replacement in an existing line.

### THE COMPACT VERSION DOES

Insulated crossarms bring the conductors closer to the shaft and remove the swing of the suspension string. In the 110 kV concept the conductor envelope is about 6.9 m narrower and the structure 1.45 m lower.

### WHAT IT NEEDS

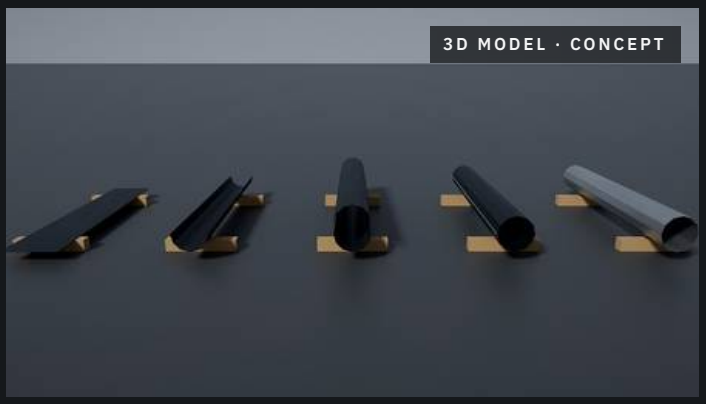
Line design to EN 50341, selection of the insulator sets with their supplier, and the operator's approval. Suspension structures only.

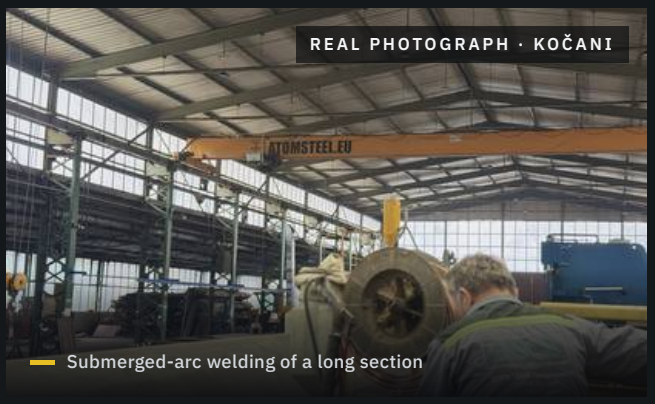
Concept values from preliminary sizing. Every structure is designed for the line by an authorised designer. Not an offer.

MANUFACTURING

# MANUFACTURING ROUTE IN KOČANI

Monopole sections follow the route of our high-mast sections: two longitudinal half-shells — cut, formed and seam-welded on our own machines.



Submerged-arc welding of a long section

**1** **CNC PLASMA**
trapezoidal plate

**2** **PRESS BRAKE**
half-shell

**3** **FIT-UP**
two half-shells

**4** **SAW**
longitudinal seams

**5** **GALVANIZING**
hot-dip, EN ISO 1461

**12 m · 1,600 t**
tandem press brake

**SAW**
automatic longitudinal seams

**3 × 5 t**
overhead cranes

**12,000 m²**
covered halls on a 25,000 m² site

## WITHIN TODAY'S CAPABILITY

- 12-sided sections up to 12 m, plate 6 to 12 mm
- slip joints, base plates, crossarms, anchor cages
- sections for 110/132 kV class structures and 10–35 kV poles
- fabrication to the designer's drawings

## NEEDS ADDITIONAL QUALIFICATION

- welding procedure qualification of the longitudinal seams for the project
- prototype and test of the slip joint
- galvanizing of 12 m sections at a partner with a suitable kettle
- 220 kV class: pieces above 4 t

## NEEDS A PARTNER

- line and structure design to EN 50341 — authorised designer
- insulated crossarms — insulator manufacturer
- foundations and erection — line contractor
- 380/400 kV solid-wall masts — out of range

### ON SITE · ERECTION

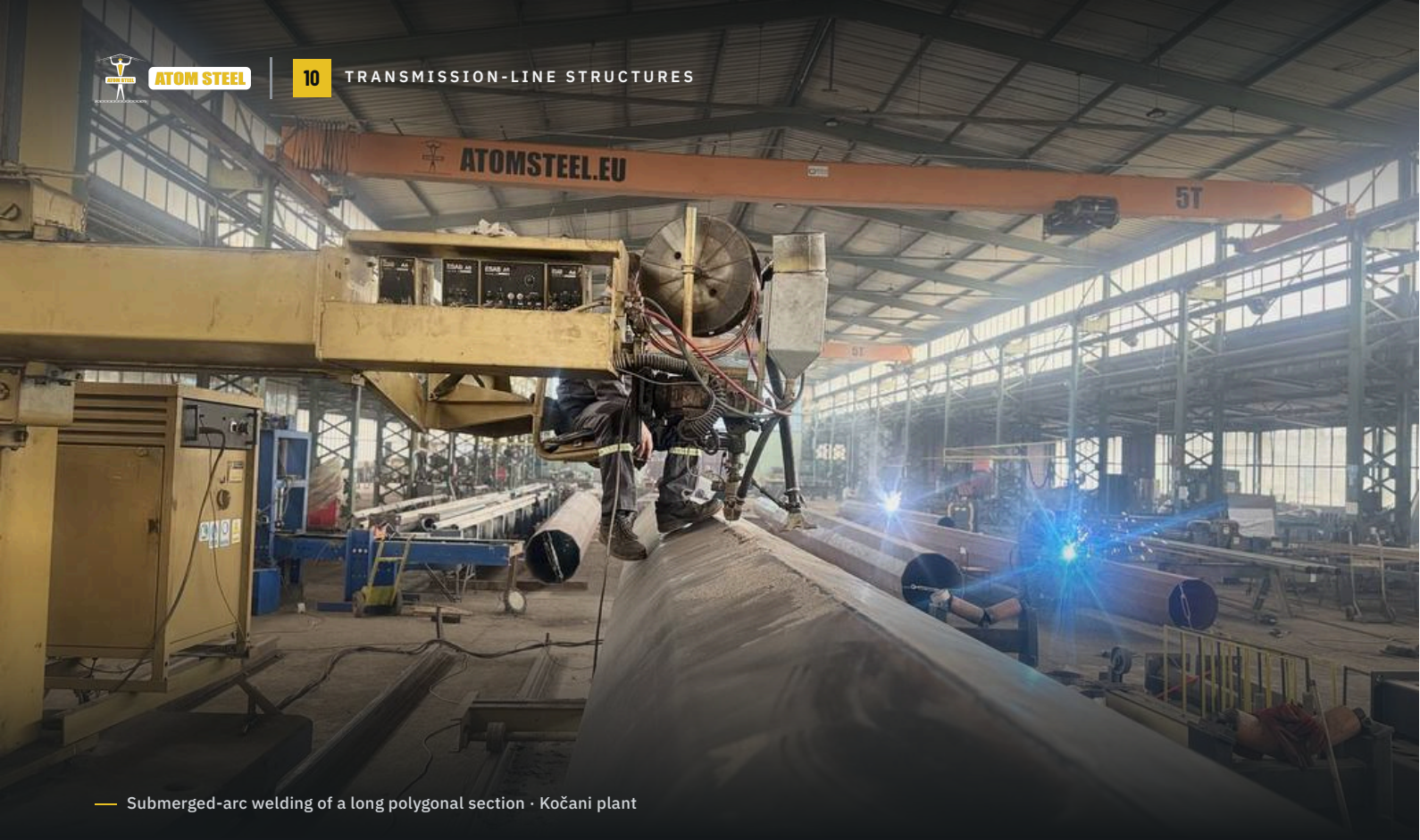
- Sections arrive on standard semi-trailers; nothing longer than 12 m
- Three lifts for the shaft of a 110 kV structure; heaviest piece about 2.3 t
- Slip joints are pulled home with hydraulic jacks
- Crossarms are fitted from a platform or pre-fitted on the ground
- Crane and truck access to the structure position is required

### FOUNDATION

One foundation: a drilled pier or a pad with pedestal and anchor cage. One foundation is not automatically less concrete than the four footings of a lattice tower: in the 110 kV concept the drilled pier needs about 1.4 times the concrete of the four pads. What it saves is excavation area, time and land.

Fabrication in accordance with EN 1090-2, Execution Class EXC3, under certified Factory Production Control according to EN 1090-1 and welding quality requirements according to EN ISO 3834-2.

Concept values from preliminary sizing. Every structure is designed for the line by an authorised designer. Not an offer.




— Submerged-arc welding of a long polygonal section · Kočani plant

● PROJECT-ENGINEERED

# TRANSMISSION-LINE STEEL STRUCTURES

Plate-based steel components for overhead-line structures — fabricated to the line designer's drawings with the cutting, press-forming and welding processes of our pole and mast production.

### COMPONENTS WE FABRICATE TO DRAWING

- **Shaft sections** polygonal sections up to 12 m, plate 6 to 12 mm
- **Slip joints and flanges** trial-assembled in the factory
- **Crossarms and brackets** tapered polygonal steel crossarms, brackets for insulated crossarms
- **Base plates and anchor cages** with setting templates
- **Poles for 10–35 kV lines** to the designer's drawings

### DESIGN

Line and structure design to EN 50341 are by the client's authorised designer. We fabricate to the approved drawings and specification.

### EXECUTION

Fabrication in accordance with EN 1090-2, Execution Class EXC3, under certified Factory Production Control according to EN 1090-1 and welding quality requirements according to EN ISO 3834-2.

### SURFACE PROTECTION

Hot-dip galvanizing to EN ISO 1461 at approved partner plants; section lengths are agreed with the galvanizing plant.

**≤ 12 m**
section length per piece

**6–12 mm**
plate thickness

**SAW**
automatic longitudinal seams

**EXC3**
certified execution class · EN 1090-2

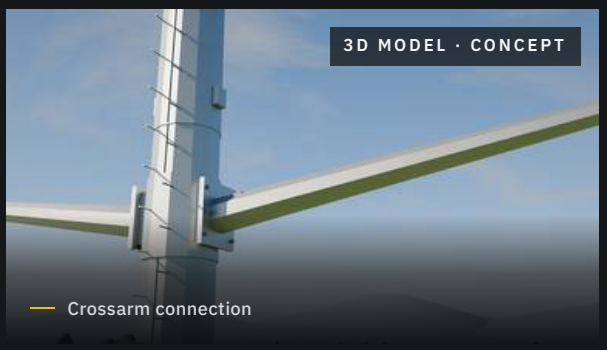
PROGRAMME STATUS

# WHAT WE OFFER, AND ON WHICH BASIS

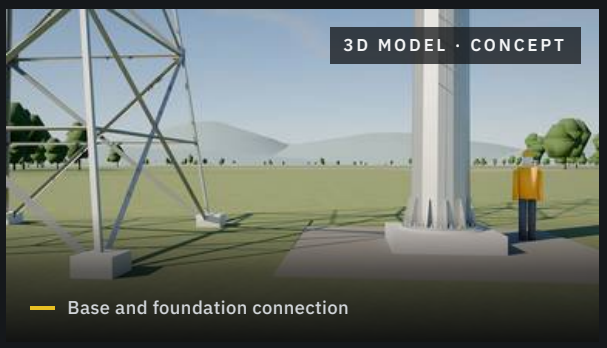
| | |
|---|---|
| ● DOCUMENTED PRODUCTION | **Shafts, mast sections and welded steel structures.** Polygonal and conical shafts, mast sections up to approx. 12 m, base plates and anchor bolt sets — produced under our certified system (pages 16–35). |
| ● FABRICATED TO DRAWING | **Components for line structures.** Crossarms, brackets, anchor cages and pole sections to the designer's drawings; welding procedure qualification for the project where required. |
| ● DEVELOPMENT PROGRAMME | **Complete transmission monopoles.** 110/132 kV class and 220 kV concepts of the ATM family (pages 40–43) — with project-specific design and an agreed pilot. |
| ON ENQUIRY | **Lattice tower components.** Bolted lattice-tower components from angle sections are evaluated per drawing and offered only after the fabrication route is confirmed. They are not a catalogue product. |

FOR AN ENQUIRY, PLEASE SEND

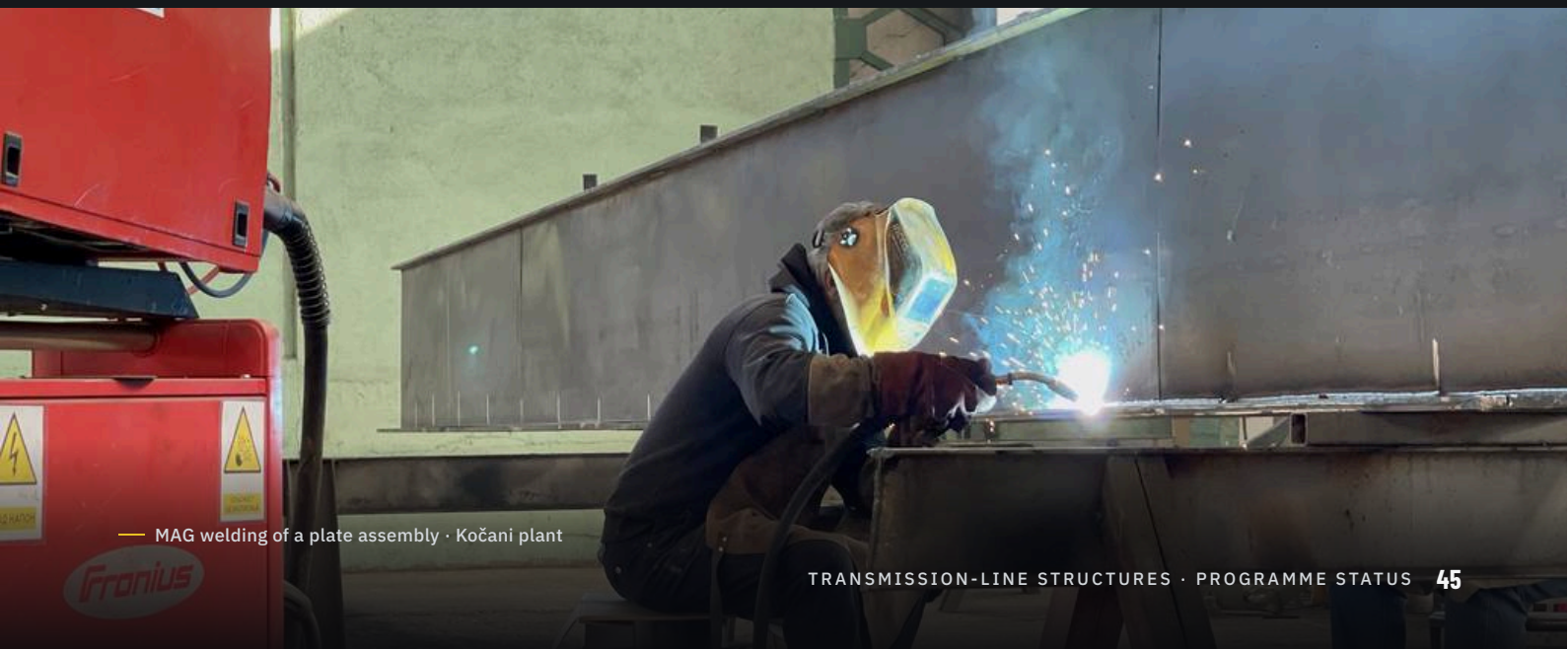
- Drawings and material list: steel grades, plate thicknesses, quantities
- Voltage level and structure types
- Execution class, welding and testing requirements
- Surface protection: galvanizing, additional paint system
- Inspection documents required
- Place and terms of delivery



— Crossarm connection



— Base and foundation connection

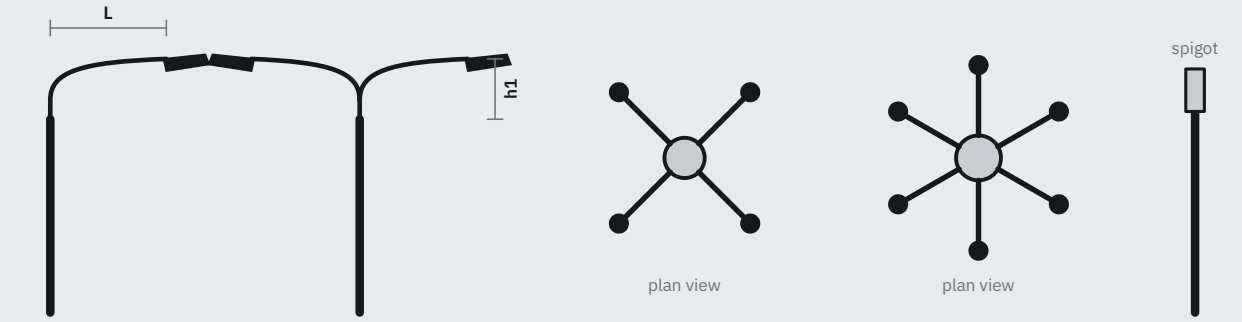

— MAG welding of a plate assembly · Kočani plant

ACCESSORIES & CONNECTION DETAILS

# BRACKETS, BASE PLATES AND ANCHOR SETS

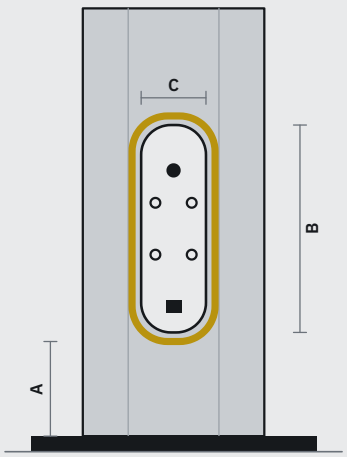
Every pole is supplied as a complete unit — with door, fixings, base plate and anchor set matched to its height and bracket.

## BRACKETS



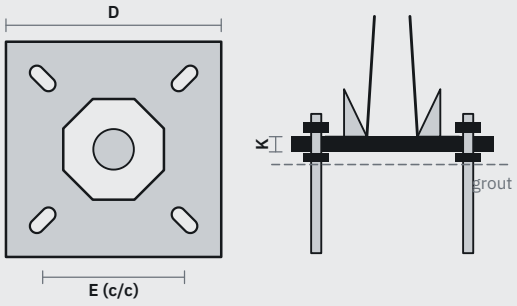

Single-, double- and multi-arm brackets in Ø60.3 mm tube, or post-top spigots for top-mounted luminaires. Standard arm dimensions: page 20.

## DOOR




Reinforced opening · lever lock

## BASE PLATE & ANCHOR SET




Plan · four slotted holes F × G

Section · anchor bolt set

## SUPPLIED WITH EVERY POLE

- Inspection door with lock, chain and locating lug
- Gear-tray fixing 2 × 4 welded M10 nuts
- Earthing lug inside the door opening
- Base plate with slotted holes
- Anchor bolt set with nuts, washers and template
- Top spigot or bracket fixing, cap

A, B, C, D, E, F, G and K are the dimension letters of the tables on pages 24 and 25. Luminaires, gear trays, cables and foundations are not included unless agreed in the order.



— Reinforced door opening — before galvanizing

DETAILS

# MADE RIGHT IN THE DETAILS



— Anchor bolts with threaded ends



— Base plate with gussets



— Door reinforcement



— Pole tops with spigots



— Door opening · polygonal shaft



— Door openings with reinforcement



— Hot-dip galvanized surface

FINISH

All poles and accessories are hot-dip galvanized to EN ISO 1461 at approved partner plants; threaded fasteners to EN ISO 10684. Other coating systems to the client's specification on request.

## Brackets

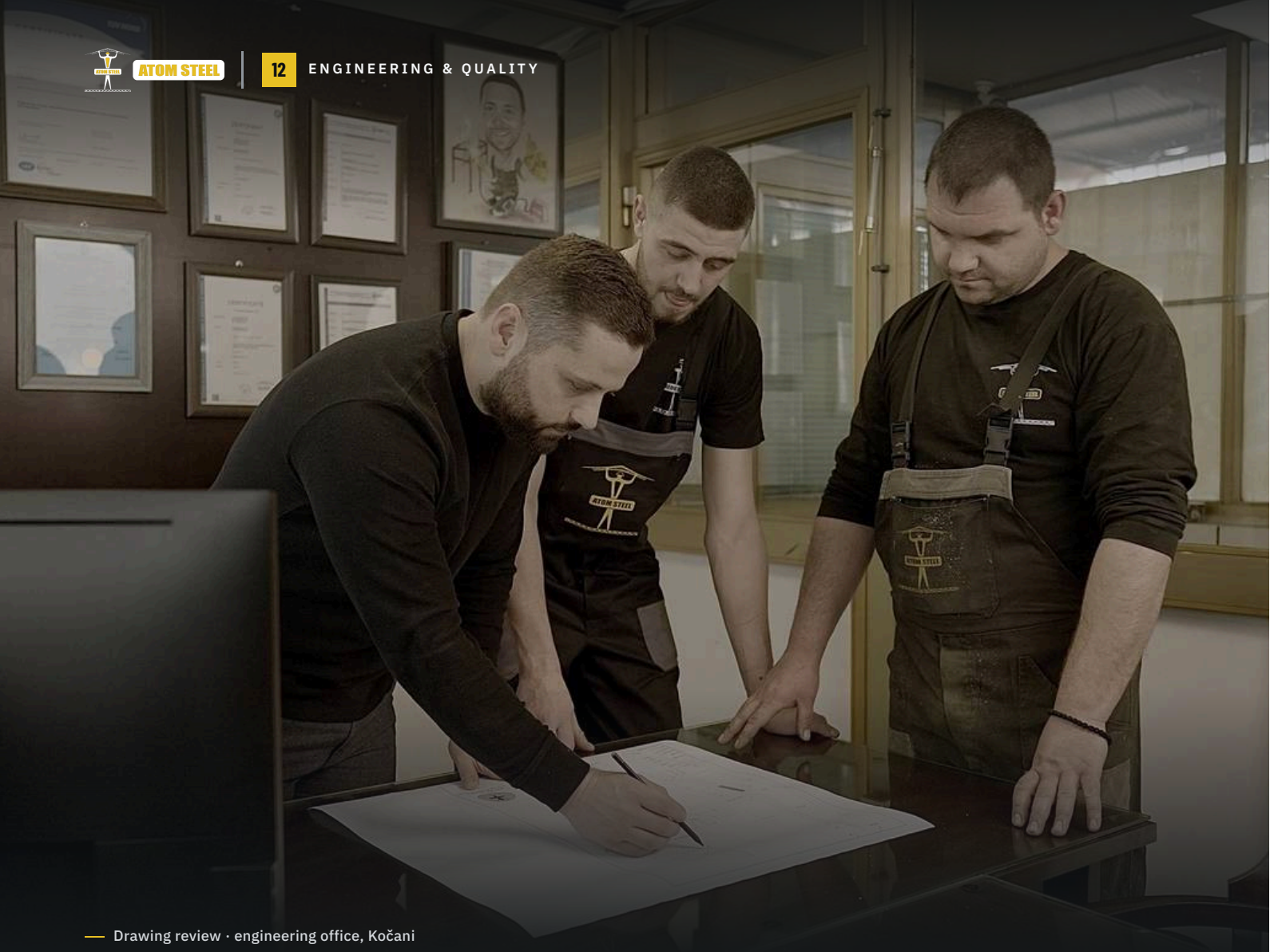
Single-, double- and multi-arm brackets in Ø60.3 mm tube, or post-top spigots for top-mounted luminaires.

## Doors

Reinforced openings, flush door with locking lever and Allen-key type lock, steel retaining chain.

## Bases

Base plates with stiffeners where required, anchor bolt sets with template — or planted shafts.



— Drawing review · engineering office, Kočani

ENGINEERING

# FROM ENQUIRY TO SHOP DRAWING

Every project-engineered pole, mast or monopole follows the same route — design inputs, structural design, shop drawings and a weld and inspection plan — before fabrication is released.

**01**
### DESIGN INPUTS
Site, loads, equipment and standards agreed with the client.

**02**
### STRUCTURAL DESIGN
Client's design, or project design by licensed structural engineers.

**03**
### SHOP DRAWINGS
Drawings, developed blanks and CNC nesting.

**04**
### WELD & INSPECTION PLAN
WPS, inspection points and documents per order.

**05**
### FABRICATION
Released after design approval.

DESIGN RESPONSIBILITY

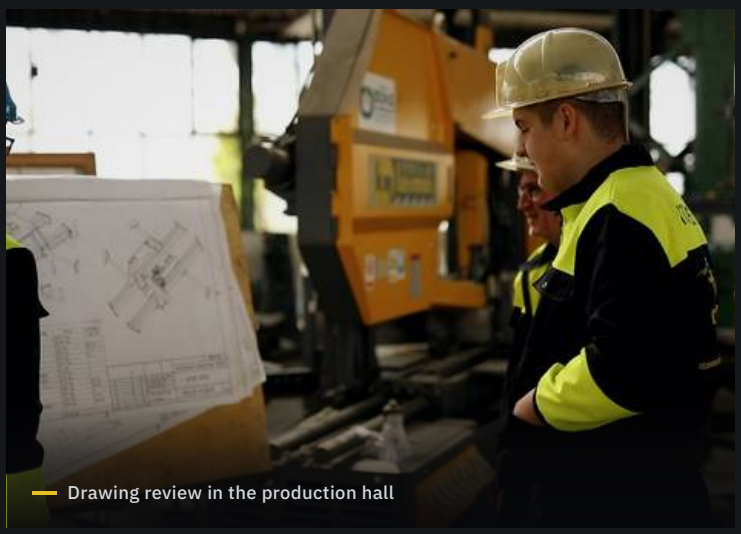
Agreed for each project: we manufacture to the client's approved design, or supply a project-specific structural design prepared by licensed structural engineers. Shop drawings are released for fabrication after design approval.

STANDARDS & TOOLS

# WHAT WE DESIGN AND BUILD TO

| STANDARDS WE DESIGN AND BUILD TO | |
|---|---|
| EN 40-3 | Lighting columns — design and verification |
| EN 1991-1-4 | Wind actions, with national annex |
| EN 1993-3-1 | Towers and masts |
| EN 50341-1 | Overhead electrical lines — by the line designer |
| EN 1090-2 | Execution of steel structures |
| EN ISO 1461 | Hot-dip galvanizing |

| TOOLS & DATA | |
|---|---|
| ANALYSIS | Dlubal RFEM · SAP2000 |
| CAD | AutoCAD · Autodesk Inventor |
| CAM | Developed blanks and nesting for CNC cutting |
| EXCHANGE | DWG / DXF · STEP · IFC |



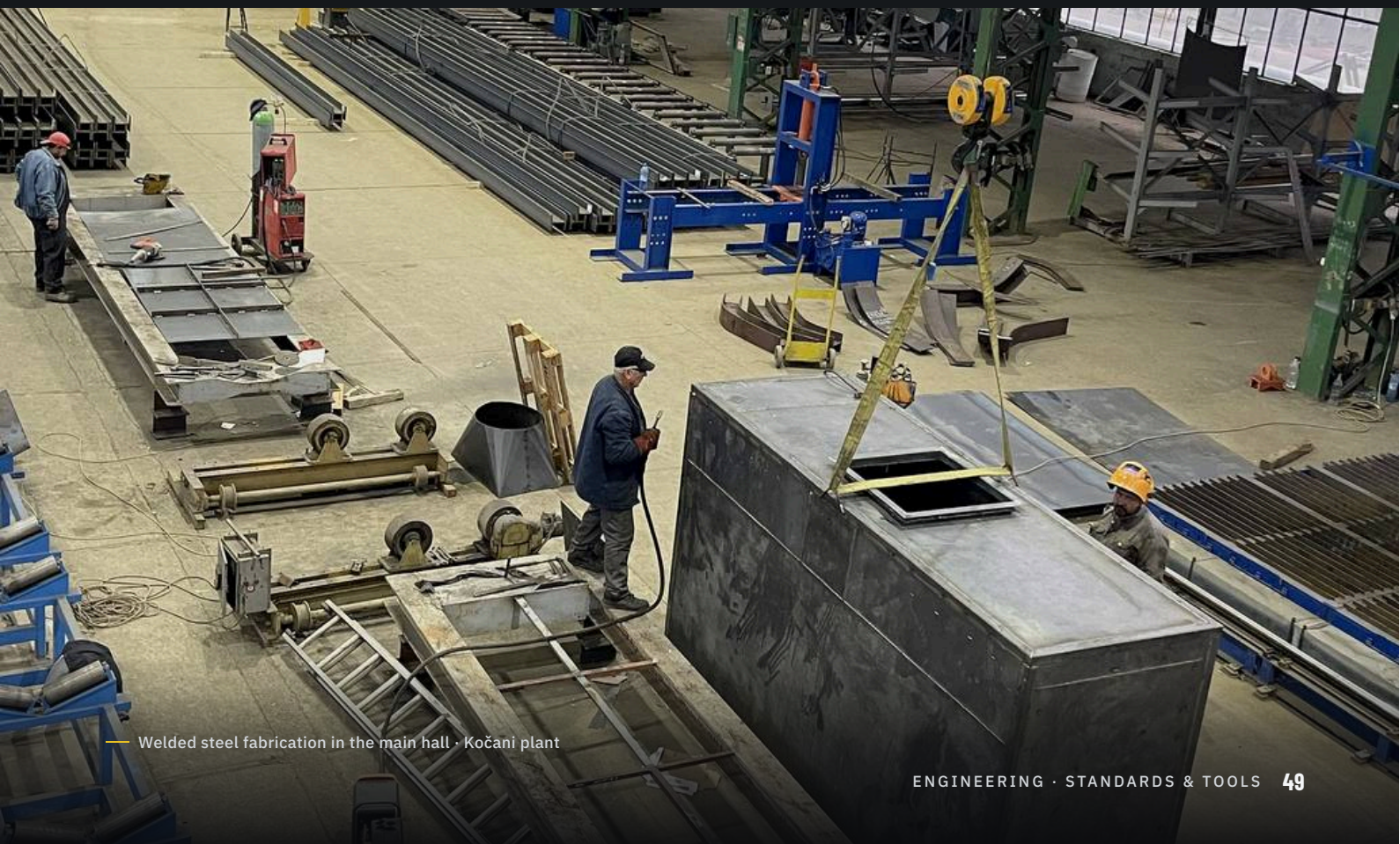
— Drawing review in the production hall

### WITH EACH DELIVERY

- ✓ Material certificates 3.1 to EN 10204
- ✓ Inspection records and dimensional checks
- ✓ Galvanizing certificate
- ✓ Declaration of Performance where CE marking applies
- ✓ Drawings and delivery list, marked to the sections

### QUALITY IN PRODUCTION

Welding coordination by IWE-qualified welding engineers · welders qualified to EN ISO 9606-1 · testing personnel to EN ISO 9712 — see pages 10 and 13.



— Welded steel fabrication in the main hall · Kočani plant

CERTIFICATION

# CERTIFIED QUALITY

Factory production control, welding quality and management systems are certified by independent bodies. Copies of all certificates are available on request.




## EN 1090-1

Factory production control · up to EXC3




## EN ISO 3834-2

Welding quality requirements




## EN 40-5

Lighting columns SR 10 · SR 13




## ISO 9001

Quality management




## ISO 14001

Environmental management




## ISO 45001

Occupational health & safety

Certificates are issued to ATOM SANTEH DOO, Kočani — the company operating the ATOM STEEL plant. Scope, certificate numbers and validity: page 51.

SCOPE AND VALIDITY

# CERTIFICATES IN DETAIL

### COMPANY CERTIFICATES

| | |
|---|---|
| EN 1090-1 | Factory production control for steel components, execution classes up to EXC3 (EN 1090-2) · certificate 1017-CPR-13.701.692 · TÜV SÜD Czech, Notified Body 1017 · surveillance audit April 2026 |
| EN ISO 3834-2 | Comprehensive quality requirements for fusion welding · TÜV SÜD Industrie Service · valid until May 2027 |
| ISO 9001 · 14001 · 45001 | Quality, environmental and occupational health & safety management · TÜV NORD CERT · valid until May 2027 · scope: engineering, design, manufacture and execution of steel structures, equipment and lighting poles |

### PRODUCT CERTIFICATION

| | |
|---|---|
| EN 40-5 | Certificate of constancy of performance 1017-CPR-15.585.895 (system 1) for the octagonal steel lighting columns SR 10 and SR 13 · TÜV SÜD Czech |
| EN 40 TYPE TESTS | 10 m and 13 m octagonal columns tested to EN 40-2, EN 40-3-1, -3-2, -3-3 and EN 40-5 · GIM-TEST, Banja Luka · valid until March 2028 |

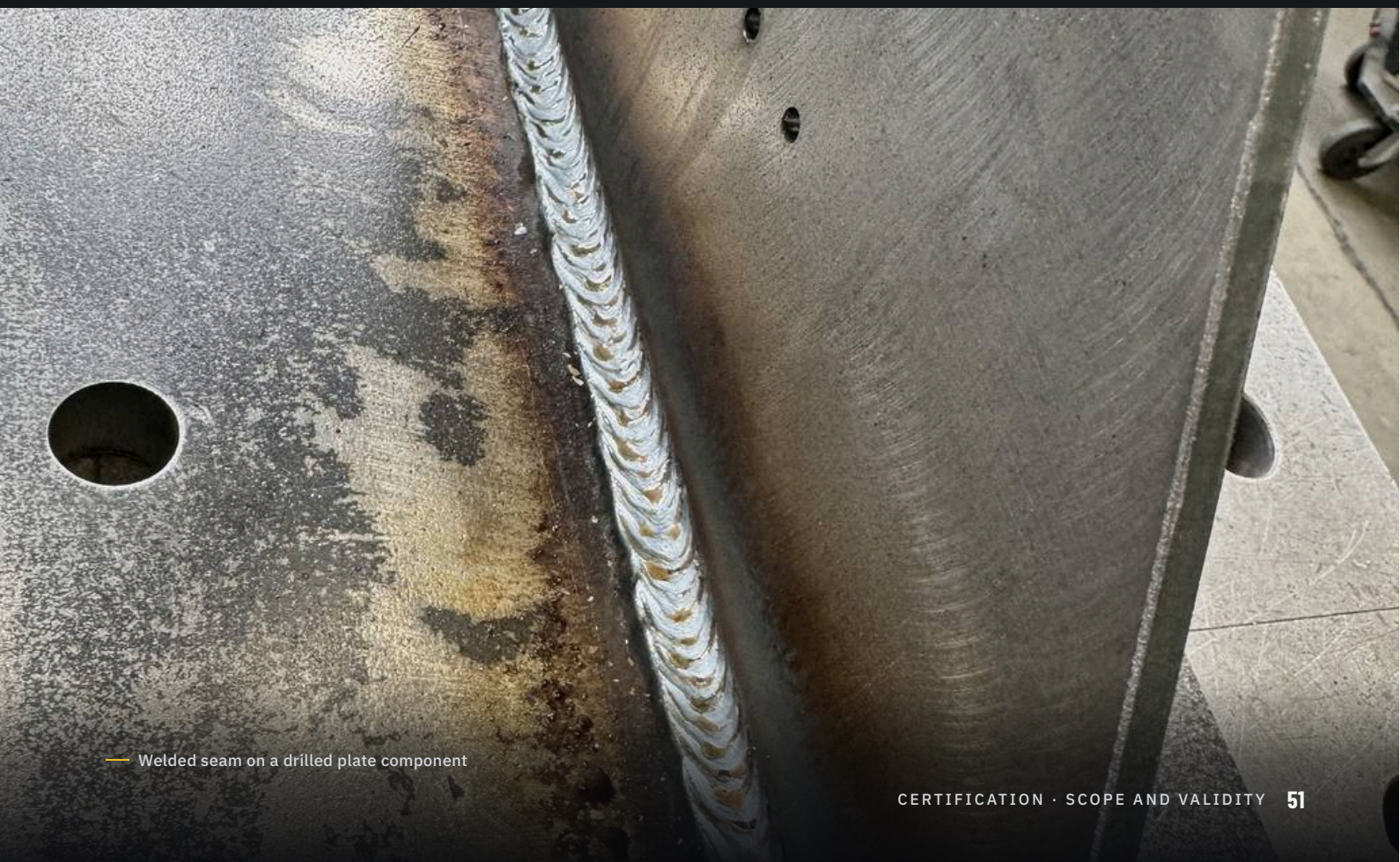
### REFERENCE STANDARDS — APPLIED PER ORDER, NOT CERTIFICATES

EN 40-3-1 / -3-3 lighting columns · EN 1991-1-4 wind actions · EN 1993-3-1 towers and masts · EN 10025-2 structural steels · EN 10204 inspection documents (3.1) · EN ISO 1461 hot-dip galvanizing · EN ISO 10684 galvanized fasteners

**EXC3**
highest certified execution class (EN 1090-2)

**121 · 135**
qualified welding processes: SAW · MAG

**S235 · S355**
steel groups in the welding approvals



— Welded seam on a drilled plate component

INTERNATIONAL B2B SUPPLY

# EUROPEAN PROJECT SUPPLY & LOGISTICS

Steel lighting poles, polygonal mast sections and fabrication-to-drawing services for importers, lighting manufacturers, distributors and EPC contractors.

## 01

**OEM & PROJECT SUPPLY**

Build-to-print, technical review and documented production.

## 02

**INSPECTION & QUALITY**

Materials, welding, dimensional checks and traceability.

## 03

**EUROPEAN DISPATCH**

Bundling, lifting and loading for agreed transport terms.



— High-mast sections loaded in the hall · December 2025

## FROM FACTORY TO SITE

Sections of up to approx. 12 m are protected and loaded at our Kočani plant.
EXW / FCA / DAP delivery terms are agreed individually for each project.

### BUYER INFORMATION

Send your pole schedule, drawings, quantities, destination and requested standards.
We review the specification and provide a technical-commercial quotation.

**technical@atomsteel.eu | www.atompoles.eu**

PROJECT FABRICATION

# FROM DRAWING TO FINISHED STEEL

Project references are reviewed case by case. Illustrative 40 m mast geometry shown in the engineering section is a design example, not a confirmed supplied project.



THE MANUFACTURING PLANT



he hall · December 2025

PACKING & DISPATCH

### 01 TECHNICAL ENQUIRY

Design input, heights, loads, equipment and applicable codes.

### 02 PRODUCTION REVIEW

Materials, weld procedures, forming and inspection plan.

### 03 FABRICATION

CNC cutting, press forming, SAW welding and fit-up.

### 04 RELEASE & SHIPPING

Documented inspection, partner galvanizing and loading.

**CLIENT REFERENCES AND PROJECT RECORDS ARE AVAILABLE ON REQUEST.**

Names, drawings and details are disclosed only where approved by the client.



— High-mast sections loaded in the hall · December 2025

LOGISTICS

# PACKED, LOADED, DELIVERED

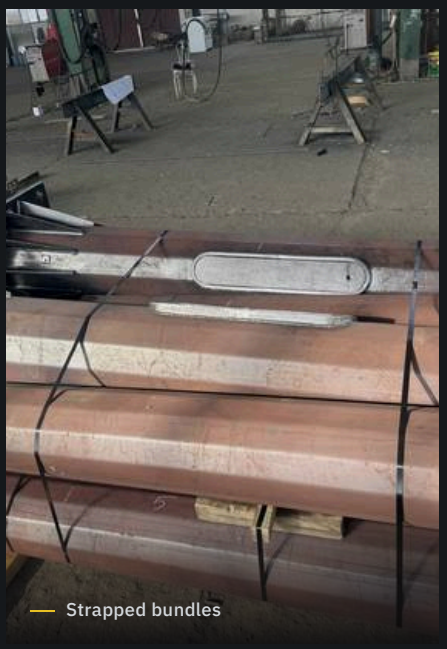
Complete poles and sections of up to approx. 12 m are bundled, protected and loaded with our own cranes — for road transport across Europe.

| | |
|---|---|
| PACKING | Bundles with timber spacers and straps · protection of threads and flanges |
| LOADING | Overhead cranes in the hall · side- and rear-loaded trailers |
| TRANSPORT | Road transport across Europe on standard trailers |

| | |
|---|---|
| TERMS | Ex works / FCA Kočani or delivered to site (DAP) — per offer, Incoterms 2020 |
| MARKING | Each section and bundle marked to the delivery list |
| DOCUMENTS | Packing list, CMR, material and galvanizing certificates |



— Base-plated poles, rear-loaded



— Strapped bundles



— Loading with the hall crane

● PROJECT-ENGINEERED

OEM & CUSTOM FABRICATION

# YOUR DESIGN, OUR PLANT

For lighting manufacturers, distributors and EPC contractors we produce poles, masts and welded steel sections to customer drawings and specifications — as single projects, serial batches or framework supply.

**12 m**
press-brake bending length

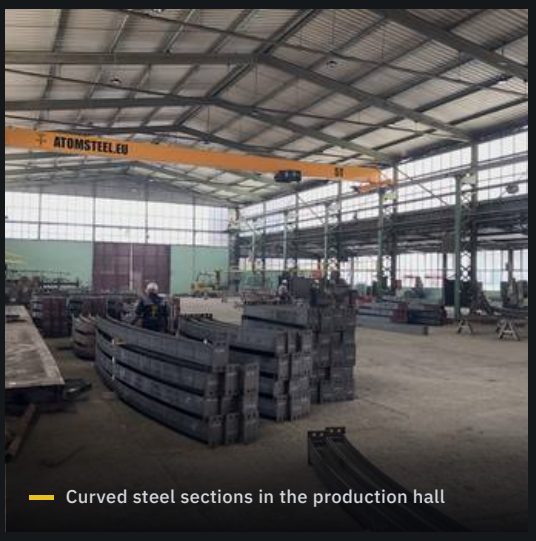
**3,100 mm**
plate-rolling width

**SAW**
automatic longitudinal seams

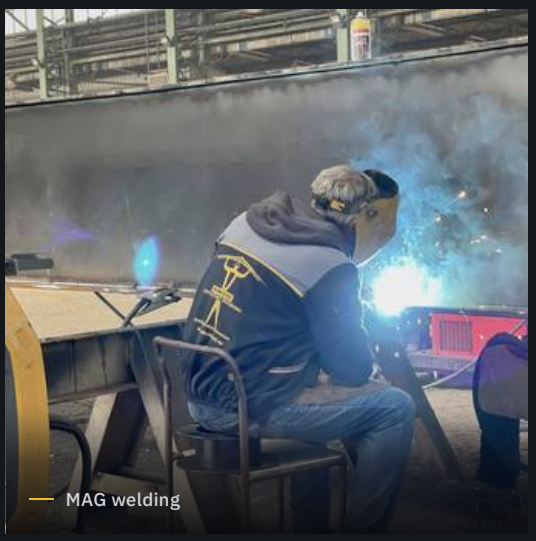
**EXC3**
certified up to · EN 1090-2



— Grinding and fit-up in the main hall



— Curved steel sections in the production hall


— MAG welding

## WAYS TO WORK WITH US

- **Build to print** your drawings and specifications
- **Engineered to order** design inputs from you, detailing by us
- **Serial batches** framework agreements with call-off deliveries
- **Your marking** customer-specific marking and packing

## TYPICAL SCOPE

Lighting poles to customer drawings, mast and monopole sections, rolled shells and welded steel sections — with EN 1090 documentation.

## BEFORE WE QUOTE

We review drawings, specifications, materials and quantities for manufacturability and raise open points in writing.

CONTACT & ENQUIRY

# SEND US YOUR ENQUIRY

For a quotation, please send the following information — we reply with a technical and commercial offer.

## LIGHTING POLES

- **Product & quantity** pole type, number of pieces
- **Height & configuration** bracket type, outreach, post-top
- **Luminaires** number, mass and projected area
- **Site** country, location, wind basis or terrain
- **Base** base plate with anchors, or planted
- **Finish** hot-dip galvanizing, further systems
- **Delivery** destination, Incoterms, schedule
- **Documents** standards, calculations and certificates required

## HIGH MASTS & SPECIAL POLES

- **Site** location, terrain category and wind basis
- **Mast** height and number of masts
- **Equipment** luminaires or cameras: number, mass and projected area
- **Head & access** head frame or platform, ladder, fall arrest
- **Limits** deflection, tilt and twist criteria
- **Foundation** anchor cage and template, interface to the foundation design
- **Documents** static calculation, drawings and certificates required

Full checklist for high masts: page 33.

## MONOPOLES & LINE STRUCTURES

- Voltage, number of circuits, conductor and earthwire types
- Wind and weight spans, line angles, structure types and quantities
- Design standard, national annex and loading zone
- Attachment heights and clearance requirements
- Deflection criterion and foundation type, if specified
- Surface protection, accessories and place of delivery

Telecom monopoles: height, antenna list, deflection criteria — page 38.

WHAT HAPPENS NEXT

**01**
### REVIEW
We check drawings, specifications, materials and quantities for manufacturability.

**02**
### CLARIFICATION
Open technical points are raised and agreed in writing.

**03**
### OFFER
Technical and commercial offer with scope, exclusions and assumptions.

**04**
### ORDER
Shop drawings for approval, then fabrication under our certified system.



Poles loaded for dispatch · Kočani plant

## REQUEST A TECHNICAL MANUFACTURING REVIEW

Send drawings, loads and specifications — we review manufacturability before we quote.

**technical@atomsteel.eu**



CONTACT

# ATOM STEEL
# KOČANI, NORTH MACEDONIA


| | |
|---|---|
| TECHNICAL ENQUIRIES | technical@atomsteel.eu |
| GENERAL | info@atomsteel.eu |
| WEB | www.atomsteel.eu · www.atompoles.eu |

ATOMSTEEL.EU


EN 1090-1 · EXC3 | EN ISO 3834-2 | ISO 9001 · 14001 · 45001


Master catalogue 2026 · Rev. R4.2 WEB · November 2026. Dimensions are nominal values in mm unless stated otherwise. Technical data are subject to change and to confirmation in the order documents. All photographs show ATOM STEEL production and premises; 3D models are marked as concepts. Certificates are issued to ATOM SANTEH DOO, Kočani.


THE STEEL POLE PRODUCT LINE
OF ATOM STEEL

ATOM STEEL

LIGHTING POLES · HIGH MASTS · MONOPOLES

Lighting poles and high masts — cut, formed and welded in our own plant in Kočani, North Macedonia.
Telecom and transmission monopoles — development programmes.