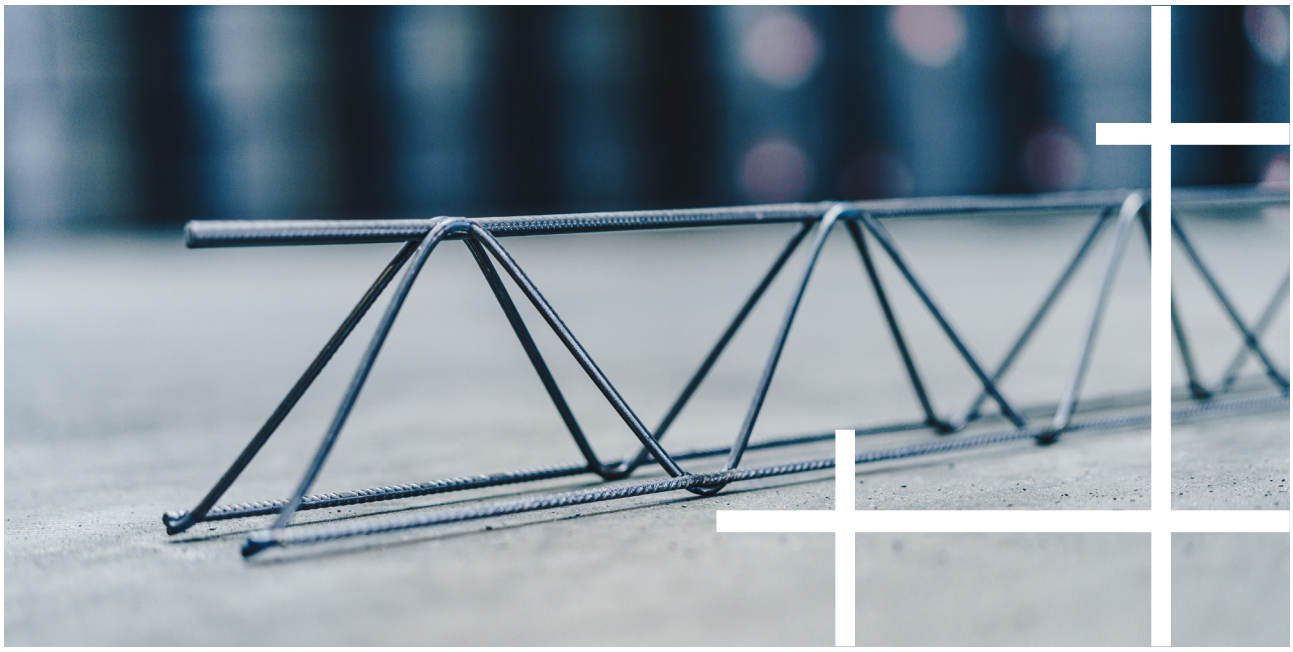
# LATTICE GIRDER



Lattice girders are prefabricated reinforcement elements according to the national technical approval or the national standard, valid in the respective country. They consist of a top wire, diagonal wire and one or two bottom wires. The top and bottom wires are connected with the diagonals by resistance spot welding. They are made of smooth, profiled or ribbed wire. Different systems are available depending on customers requirements. The wire of the lattice girders are available in ductlility classes A (standard ductility) and B (high ductility).

Lattice girders are used in different prefabricated concrete elements like walls and slabs.

## PRODUCT SPECIFICATION

**Fabricated** » **According to standard or approval**

**Delivery time** » **From stock or Production**

**Certified for following countries** »

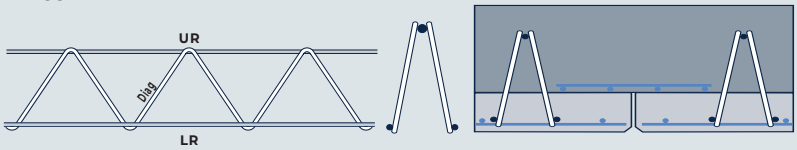
| Country | KT 800 | KTS | KT 100 | GT 100 | KT 900 | KTW 200 |
|---|---|---|---|---|---|---|
| A | X | X | | | | X |
| B | X | | | | | |
| D | X | X | X | X | X | X |
| F | X | X | | | | |
| N | X | | | | | |
| NL | X | X | | X | | |
| S | X | | | | | |

# LATTICE GIRDER

## KT 800

**Height:**
60 - 300 mm
**1 x UW:**
ø 8 - 16 mm
**2 x Diag:**
ø 6 - 8 mm
**2 x LW:**
ø 6 - 16 mm

**Application:**
Retrospectively with roof slabs supplemented with in-situ concrete according to EN 1992-1-1




## KT S

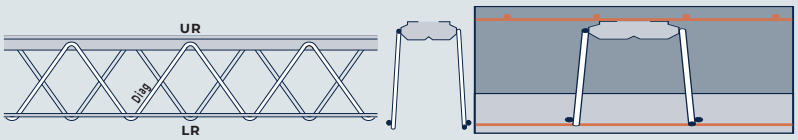
**Height:**
80 - 300 mm
**1 x UW:**
ø 5 mm
**2 x Diag:**
ø 6 - 7 mm
**2 x LW:**
ø 5 mm

**Application:**
Retrospectively with roof slabs supplemented with in-situ concrete according to EN 1992-1-1. Special, particularly economical lattice girders for taking transverse or shearing loads in partially precast slabs (shear force girder). Also permissible for not predominantly static loads.

## KT 100

**Height:**
100 - 180 mm
**1 x UW:**
Sheet profile
**2 x Diag:**
ø 7 - 8 mm
**2 x LW:**
ø 6 mm

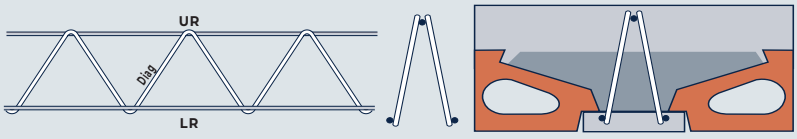
**Application:**
Retrospectively with roof slabs supplemented with in-situ concrete according to EN 1992-1-1. Assembly span lengths of up to 5.25 m are possible without support with the MONTAQUICK ® system (sheet profile is filed with ready-mix concrete). Also for not predominantly static loads.




## GT 100

**Height:**
110 - 290 mm
**1 x UW:**
ø 8 mm
**2 x Diag:**
ø 6 mm
**2 x LW:**
ø 6 - 14 mm

**Application:**
Beam, ribbed and T-beam ceilings with concrete skirting board or prefabricated slabs according to EN 1992-1-1.

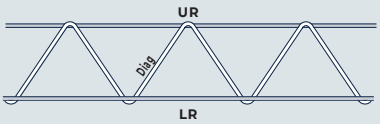


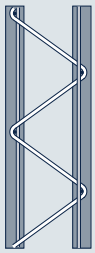
# LATTICE GIRDER

## KT 800

**Height:**
130 - 360 mm
**1 x UW:**
ø 8 - 12 mm
**2 x Diag:**
ø 6 - 7 mm
**2 x LW:**
ø 6 - 8 mm

**Application:**
Walls according to EN 1992-1-1 and approval.
Prefabricated reinforced concrete slab walls that are poured at the construction site with in-situ concrete.

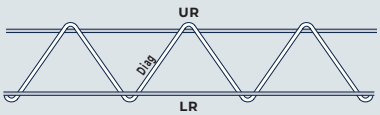


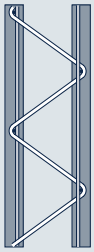


## KT 900

**Height:**
150 - 300 mm
**1 x UW:**
ø 8 mm
**2 x Diag:**
ø 6 mm
**2 x LW:**
ø 6 mm

**Application:**
Walls according to EN 1992-1-1 and approval.
Prefabricated reinforced concrete slab walls that are poured at the construction site with in-situ concrete.

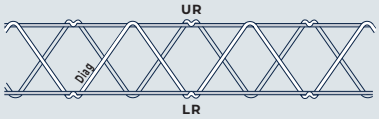


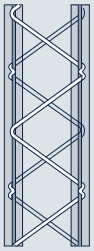


## KTW 200

**Height:**
140 - 400 mm
**1 x UW:**
ø 8, 10 mm
**2 x Diag:**
ø 6-7 mm
**2 x LW:**
ø 6 mm

**Application:**
Walls according to EN 1992-1-1 and approval.
Prefabricated reinforced concrete slab walls that are poured at the construction site with in-situ concrete.
Also permissible for not predominantly static loads.





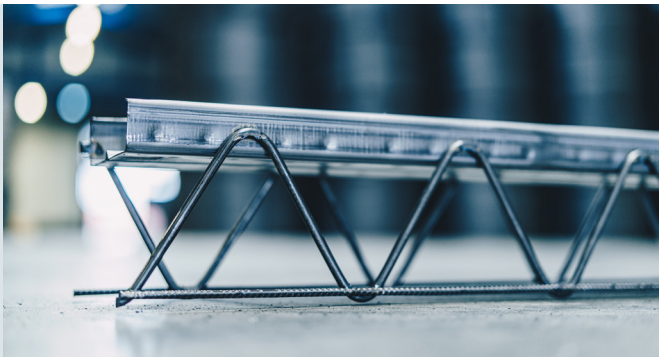
**Other lattice girder heights and wire combinations are available on request!**

# MONTAQUICK LATTICE GIRDER KT 100

**Height** » 10-18 cm

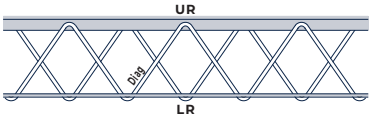
**Wire size**
Upper wire » Sheet profile
Diagonals » 2 Ø 7-8 mm
Lower wire » 2 Ø 6 mm

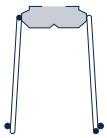
When assembled, the KT 100 lattice girder can straddle large spans in the mounting state and in its final condition is approved for dynamic traffic flows.

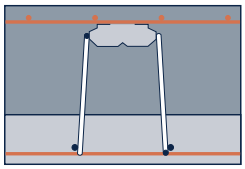


## Application:

Retrospectively with roof slabs supplemented with in-situ concrete according to DIN 1045-1, 13.4.3. With the MONTAQUICK ® system span lengths of up to 5,25 m are possible without support (sheet profile is filed with ready-mix concrete). Also for not predominantly static loads.





## Girder name:

The last two characters of the girder name indicate the girder height.
**For example: KT 116 (girder height 16 cm)**
The height of the girder is measured from the upper edge of the upper wire to the lower edge of the diagonals.

## Girder size:

| Upper wire* | Lower wire | Diagonals | Girder heights |
|---|---|---|---|
| (mm) | Ø (mm) | Ø (mm) | (cm) |
| Width: 125,0<br>Height: 40,0<br>Thickness: 1,5 | 2 Ø 6 | 2 Ø 7 | 10 - 14 |
| | | 2 Ø 8 | 15 - 18 |

* Upper wire u-shaped sheet profile that is concrete-lined in a precast factory.

## Girder weight per m of girder length (kg / lfm):

| KT | 110 | 111 | 112 | 113 | 114 | 115 | 116 | 117 | 118 |
|---|---|---|---|---|---|---|---|---|---|
| kg / lfm | 3,80 | 3,84 | 3,88 | 3,93 | 3,98 | 4,33 | 4,41 | 4,47 | 4,54 |

# MONTAQUICK LATTICE GIRDER KT 100

## Application:

» Significant stability when assembled which allows it to achieve spans of over 5 m.
» Use as shearing reinforcement in prefabricated slabs with a statically supporting layer of in-situ concrete.
» Can also be used for not predominantly static traffic flows.

## Application note:

### General

» According to DIN EN 1992-1-1 and DIN EN 1992-1-1/NA, the concrete pressure rod may be guided up to the upper edge of the in-situ concrete.
» The minimum distance between the lower edge of the upper wire and the prefabricated slab must be at least 3,5 cm.

### Composite application

» The lattice girders must not exceed the overall section height.

### Shearing force application

» Taking into account the upper reinforcement and its concrete cover, the lattice girders must exceed the overall section height.

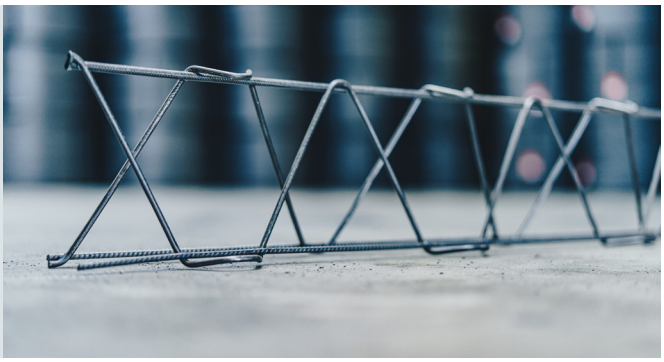
### Use in not predominantly static traffic loads.

» Prefabricated slab thickness of at least 6 cm, or 8 cm in bridge construction
» Shearing stress limit in shearing force usage: 0,15 $v_{Rd, max}$ according to approval.
» Permissible vibration range for the diagonals: $\Delta \sigma_{RSK}$ = 92 N / mm²

# LATTICE GIRDER KTW 200

**Height** » 14-40 cm

**Wire size**
Upper wire » Ø 8, 10 mm
Diagonals » 2 Ø 6-7 mm
Lower wire » 2 Ø 6 mm



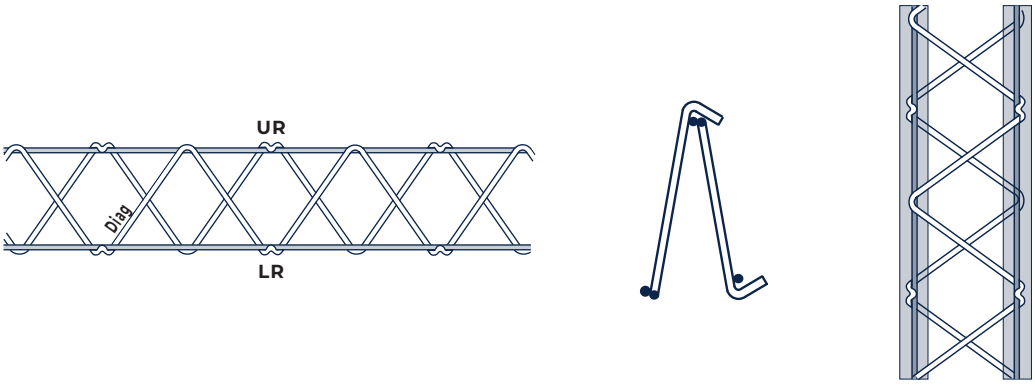
## Application:

| Application | Lattice girder type KTW 200 |
|---|---|
| Reinforcement of vertical butt joints | Not needed |
| Strutting with bars | Not needed |
| Reinforcement on free wall ends | No stirrups needed by using the KTW 200 |
| Connection reinforcing | Single row |
| Concreting speed for s = 62,5 cm | 0,80 m/h |
| Use in not predominantly static loads | Possible |
| Use with internal thermal insulation | Possible, with separate approval |
| Use of lightweight concrete | Possible |
| Lattice girder height | Up to 40 cm |

# LATTICE GIRDER KTW 200

## Application:

Walls according to DIN 1045-1, 13.6 and 13.7 and approval.
Prefabricated reinforced concrete slab walls that are casted at the construction site with in-situ concrete.
Also permissible for not predominantly static loads.




For the KTW 200 lattice girder, the last two characters indicate the girder height. The girder height is measured on a flat surface, from the lower edge diagonalto the upper edge diagonal.

The normal heights with the corresponding wire dimensions and girder weights are summarized in the following table. The KTW lattice girder is produced in heights of whole cm intervals.

## Girder weight per m of girder length (kg/RMT)

| KTW | 214 | 215 | 216 | 217 | 218 | 219 | 220 | 221 | 222 | 223 | 224 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| kg/m | 1,513 | 1,535 | 1,557 | 1,579 | 1,602 | 1,626 | 1,650 | 1,674 | 1,699 | 1,724 | 1,749 |

| KTW | 225 | 226 | 227 | 228 | 229 | 230 | 231 | 232 | 233 | 234 | 235 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| kg/m | 1,774 | 1,800 | 1,826 | 1,852 | 1,878 | 2,290 | 2,326 | 2,362 | 2,399 | 2,435 | 2,472 |

| KTW | 236 | 237 | 238 | 239 | 240 |
|---|---|---|---|---|---|
| kg/m | 2,509 | 2,546 | 2,583 | 2,620 | 2,658 |

**Note:** Up to 29 cm lattice girder height, diagonals are Ø 6 mm
From lattice girder height 30 cm and up, diagonals are Ø 7 mm