

Technical Specifications

# CW607N

| Alloy     |               |
|-----------|---------------|
| EN Symbol | CuZn38Pb1     |
| EN No     | CW607N        |
| ASTM      | C37000-C37100 |
| DIN       | 20.372        |

| CW626N Chemical Composition |       |      |      |      |      |      |    |       |
|-----------------------------|-------|------|------|------|------|------|----|-------|
|                             | Cu    | Pb   | Sn   | Fe   | Ni   | Al   | Si | Zn    |
| Min                         | 60,00 | 0,80 | -    | -    | -    | -    | -  | -     |
| Max                         | 61,00 | 1,60 | 0,20 | 0,20 | 0,30 | 0,05 | -  | Kalan |

### Applications and Features

It is used in parts that are suitable for bending.

It is not suitable for 4MS and UBA.

### Production Standard

|                                                      |          |
|------------------------------------------------------|----------|
| Solid Bar for Machining<br>(Chamfered)               | EN 12164 |
| Solid Bar for Forging                                | EN 12165 |
| Hollow Bar for Machining<br>(Chamfered upon request) | EN 12168 |

### Heat Treatment

|                               |              |             |
|-------------------------------|--------------|-------------|
| Annealing                     | 450 – 550 °C | 1 – 2 hours |
| Stress Relieving<br>Annealing | 200 – 320 °C | 1 – 2 hours |

### Technical Properties

|                                     |                   |                |
|-------------------------------------|-------------------|----------------|
| Structure                           |                   | $\alpha+\beta$ |
| Density                             | g/cm <sup>3</sup> | 8,44           |
| Coefficient of Thermal<br>Expansion | 10-6/K            | 00020,4        |
| Electrical Conductivity<br>(%)      | IACS              | 00024          |
| Thermal Conductivity                | W/(m K)           | 00110          |
| Elastic Modulus                     | GPa               | 00103          |
| Melting Temperature                 | °C                | 880-900        |

### Machining Properties

|                          |        |
|--------------------------|--------|
| Machinability            | Good   |
| Hot Forming (700-800 °C) | Good   |
| Cold Forming             | Medium |

### Corrosion Resistance

Good Corrosion Resistance

## EN 12164:2024 - Free Machining Rod Standard Mechanical Properties

| Material Condition | Diameter |      | Parallel Surface (mm) |      | Tensile Strength Rm | 0,2 % Yield Strength Rp 0,2 |     | Elongation  |           |       | Hardness |     |
|--------------------|----------|------|-----------------------|------|---------------------|-----------------------------|-----|-------------|-----------|-------|----------|-----|
|                    | (mm)     |      | (mm)                  |      | N/mm2 (MPa)         | N/mm2 (MPa)                 |     | A100 mm (%) | A11,3 (%) | A (%) | (HBW)    |     |
|                    | Abv.     | Inc. | Abv.                  | Inc. | Min                 | Min                         | Max | Min         | Min       | Min   | Min      | max |
| M                  | All      |      | All                   |      | As produced         |                             |     |             |           |       |          |     |
| R360               | 5        | 60   | 5                     | 55   | 360                 | -                           | 300 | -           | 15        | 20    | -        | -   |
| H070               | 5        | 60   | 5                     | 55   | -                   | -                           | -   | -           | -         | -     | 70       | 100 |
| R410               | 5        | 40   | 5                     | 35   | 410                 | 230                         | -   | 8           | 10        | 12    | -        | -   |
| H100               | 5        | 40   | 5                     | 35   | -                   | -                           | -   | -           | -         | -     | 100      | 145 |
| R500               | 5        | 14   | 5                     | 10   | 500                 | 350                         | -   | 3           | 5         | 8     | -        | -   |
| H120               | 5        | 14   | 5                     | 10   | -                   | -                           | -   | -           | -         | -     | 120      | -   |

\* Please contact us for R360 Condition.

## EN 12165:2024 Forging Stock Standard Mechanical Properties

| Material Condition | Diameter (mm) |          | Hardness    |      |
|--------------------|---------------|----------|-------------|------|
|                    | (mm)          |          | (HBW)       |      |
|                    | Above         | Included | Min.        | Max. |
| M                  | All           |          | As produced |      |
| H070               | 8             | 110      | 70          | 100  |

\* Mechanical properties are referenced according to the EN 12164:2024 standard.

## EN 12168:2024 - Free Machining Hollow Rod Standard Mechanical Properties

| Material Condition | Wall Thickness |      | Tensile Strength Rm | 0,2 % Yield Strength Rp 0,2 |     | Elongation | Hardness |     |
|--------------------|----------------|------|---------------------|-----------------------------|-----|------------|----------|-----|
|                    | (mm)           |      | N/mm2 (MPa)         | N/mm2 (MPa)                 |     | A (%)      | (HBW)    |     |
|                    | Abv.           | Inc. | Min                 | Min                         | Max | Min        | Min      | Min |
| M                  | All            |      | As produced         |                             |     |            |          |     |
| R360               | 3              | 20   | 360                 | -                           | 300 | 20         | -        | -   |
| H070               | 3              | 20   | -                   | -                           | -   | -          | 70       | 100 |
| R410               | 3              | 10   | 410                 | 250                         | -   | 12         | -        | -   |
| H100               | 3              | 10   | -                   | -                           | -   | -          | 100      | 145 |
| R500               | 3              | 7    | 500                 | 350                         | -   | 8          | -        | -   |
| H120               | 3              | 7    | -                   | -                           | -   | -          | 120      | -   |

\* Hollow tubes are produced in M condition. Please contact us for special requests.

**EN 12164:2024 - Free Machining Rod Standard Dimensional Tolerances**

| Dimensional tolerances of the round bar<br>(including deviation from roundness) |                        |               |         |         | Dimensional tolerances of the width between<br>parallel surfaces of regular polygon bars |
|---------------------------------------------------------------------------------|------------------------|---------------|---------|---------|------------------------------------------------------------------------------------------|
| Nominal Diameter (mm)                                                           |                        | Tolerance(mm) |         |         |                                                                                          |
| Above                                                                           | Up to and including... | Class A       | Class B | Class C | Tolerance(mm)                                                                            |
| 2                                                                               | 3                      | -0,04         | -0,025  | -0,015  | -0,06                                                                                    |
| 3                                                                               | 6                      | -0,05         | -0,03   | -0,020  | -0,08                                                                                    |
| 6                                                                               | 10                     | -0,06         | -0,036  | -0,025  | -0,09                                                                                    |
| 10                                                                              | 18                     | -0,07         | -0,043  | -       | -0,11                                                                                    |
| 18                                                                              | 30                     | -0,08         | -0,052  | -       | -0,13                                                                                    |
| 30                                                                              | 50                     | -0,16         | -       | -       | -0,016                                                                                   |
| 50                                                                              | 55                     | -0,19         | -       | -       | -0,19                                                                                    |

\* Please contact us for Class C tolerances.

**EN 12164:2024 - Free Machining Rod Length Standard**

| Length tolerance (mm) for bars in nominal lengths      |                        |                               |                   |
|--------------------------------------------------------|------------------------|-------------------------------|-------------------|
| Nominal diameter or width between<br>parallel surfaces |                        | Preferred (Available) Lengths | Length Tolerances |
| Above                                                  | Up to and including... |                               |                   |
| 2                                                      | 30                     | 3000 or 4000                  | ±0,50             |
| 30                                                     | 50                     | 3000 or 4000                  | ±0,100            |
| 50                                                     | 60                     | 3000                          | ±0,100            |

**EN 12165:2024 - Round Forging Stock Diameter Tolerance**

| Nominal Diameter(mm) |                     | Tolerances(mm) |         |
|----------------------|---------------------|----------------|---------|
| Above                | Up to and including | Class A        | Class B |
| 10                   | 18                  | ±0,25          | ±0,14   |
| 18                   | 30                  | ±0,30          | ±0,17   |
| 30                   | 50                  | ±0,60          | ±0,20   |
| 50                   | 65                  | ±0,70          | ±0,37   |
| 65                   | 80                  | ±0,70          | -       |
| 80                   | 110                 | ±2             | -       |

\* For forged stocks, length and length tolerance are determined mutually. If no request is specified, the manufacturer will decide on the length.

## EN 12168:2024 - Free Machining Hollow Rod Standard Dimensional Tolerances

| Outer diameter or width between parallel surfaces tolerances      |      |               |         |         | Wall Thickness Tolerance    |      | Wall Thickness Tolerance % | Bore Diameter Tolerances   |      |                             |         |
|-------------------------------------------------------------------|------|---------------|---------|---------|-----------------------------|------|----------------------------|----------------------------|------|-----------------------------|---------|
| Nominal outer diameter or distance between parallel surfaces (mm) |      | Tolerance(mm) |         |         | Nominal Wall Thickness (mm) |      |                            | Nominal Bore Diameter (mm) |      | Bore Diameter Tolerance(mm) |         |
| Abv.                                                              | İncç | Class A       | Class B | Class C | Abv.                        | Inc. |                            | Abv.                       | Inc. | Class A                     | Class B |
| 17                                                                | 18   | -             | -0,18   | -0,11   | 2a                          | 3    | ±12*Wall Thickness         | 10                         | 18   | ±35                         | ±14     |
| 18                                                                | 30   | -             | -0,21   | -0,13   | 3                           | 6    | ±10*Wall Thickness         | 18                         | 30   | ±42                         | ±17     |
| 30                                                                | 50   | ±0,31         | -0,25   | -0,16   | 6                           | 10   | ±9*Wall Thickness          | 30                         | 50   | ±80                         | ±20     |
| 50                                                                | 80   | ±0,60         | -0,46   | -0,30   | 10                          | -    | ±8*Wall Thickness          | 50                         | 70   | ±95                         | ±37     |

\* Please contact us for hollow tubes orders.

## EN 12168:2024 - Free Machining Hollow Rod Length Standard

| Length Tolerance (mm) for Bars in Nominal Lengths   |                     |                               |                   |
|-----------------------------------------------------|---------------------|-------------------------------|-------------------|
| Nominal Diameter or Width Between Parallel Surfaces |                     | Preferred (Available) Lengths | Length Tolerances |
| Abv.                                                | Up to and including |                               |                   |
| 18                                                  | 30                  | 2700 - 4000                   | ±0,50             |
| 30                                                  | 50                  | 2500 - 3500                   | ±0,100            |
| 50                                                  | 80                  | 2000 - 3000                   | ±0,100            |

## Chamfer

| Determining Shaped End Dimensions (mm)                     |                        |                              |      |                                |      |
|------------------------------------------------------------|------------------------|------------------------------|------|--------------------------------|------|
| Nominal Diameter D or Distance Between Parallel Surfaces W |                        | Figure 1 – Chamfer, Length L |      | Figure 2 – Sharpened, Length L |      |
| Above                                                      | Up to and including... | Min.                         | Max. | Min.                           | Max. |
| 5                                                          | 10                     | 0,2                          | 1,5  | 2,0                            | 7,0  |
| 10                                                         | 20                     | 0,2                          | 2,0  | 3,0                            | 10,0 |
| 20                                                         | 30                     | 0,2                          | 3,0  | 4,0                            | 12,0 |

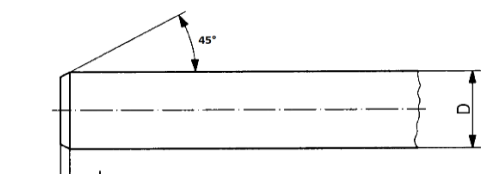


Fig. 1 Chamfer

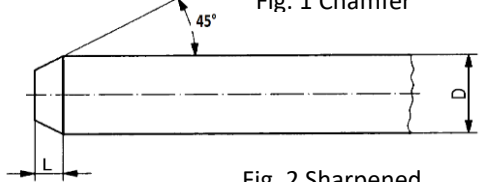


Fig. 2 Sharpened

\*Chamfering is done to remove burrs.  
 \*Tapering is done for easy feeding of bars into automatic feeding devices.  
 \*Please contact us for chamfering on products over 50mm.

## Stress Relieving

According to the EN 12164 standard, stress relieving annealing is not performed unless a special request is specified. Stress relieving annealing is performed on all products that have undergone cold forming according to the EN 12168 standard.

## Packaging

After chamfering, all products according to the EN 12164 and EN 12168 standards are packaged in thick nylon.

Bundles range from 500 to 1000 kg.

If there is a special request, the products are shipped in wooden crates.