# SKR - SKS

## Screw anchor for concrete

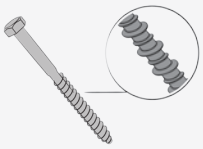
Carbon steel with white galvanic zinc coating

### FAST INSTALLATION

Cement screws for simple and fast assembly

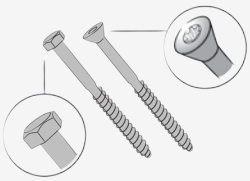
### SPECIAL THREADING

Special thread for dry fastening without creating expansion stresses in the concrete



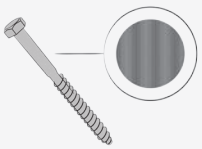
### LARGER HEAD

Larger head for stronger and safer fastening of the wood



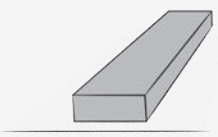
### ECO-FRIENDLY

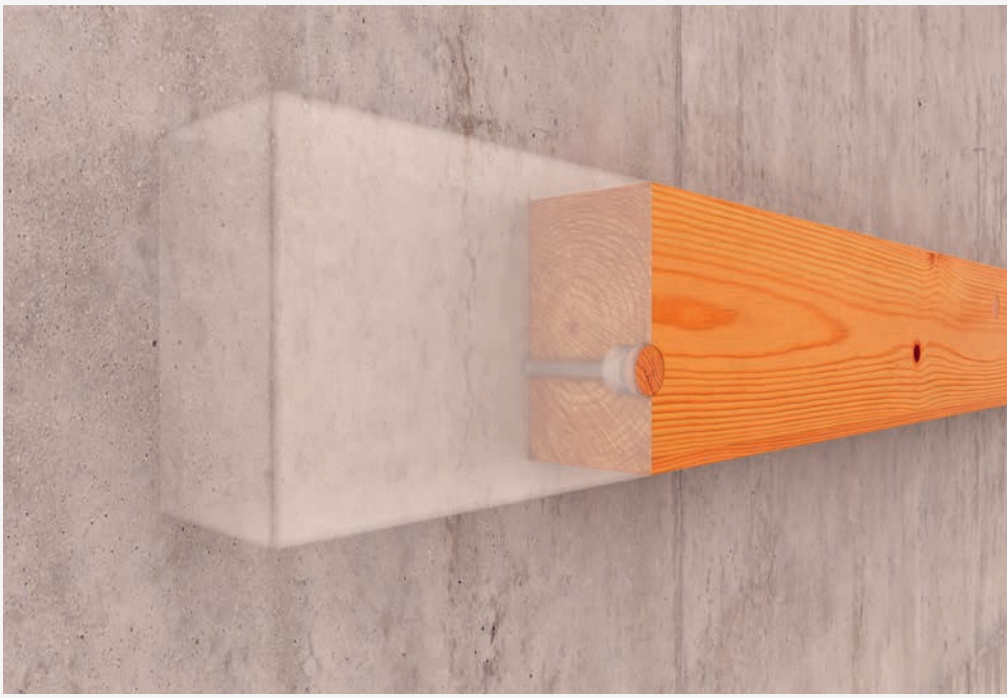
Trivalent $Cr^{3}$+ chrome coating, replacing hexavalent chrome $Cr^{6}$



### FIELDS OF USE

Fastening of wood or steel elements to concrete supports Service classes 1 and 2






### DRY FASTENING

The special thread allows for fast installation of wood or steel elements on concrete supports with a simple screwdriver and a small pre-bored hole

### FAST AND STRONG FASTENING

Versions with countersunk and hexagonal heads: the larger size of the head guarantees better shear resistance in fastening wood elements

### REDUCED MINIMUM DISTANCES

Fastening on reinforced concrete occurs without the creation of any expansion stresses in the concrete and allows for reduced minimum distances

# Applications

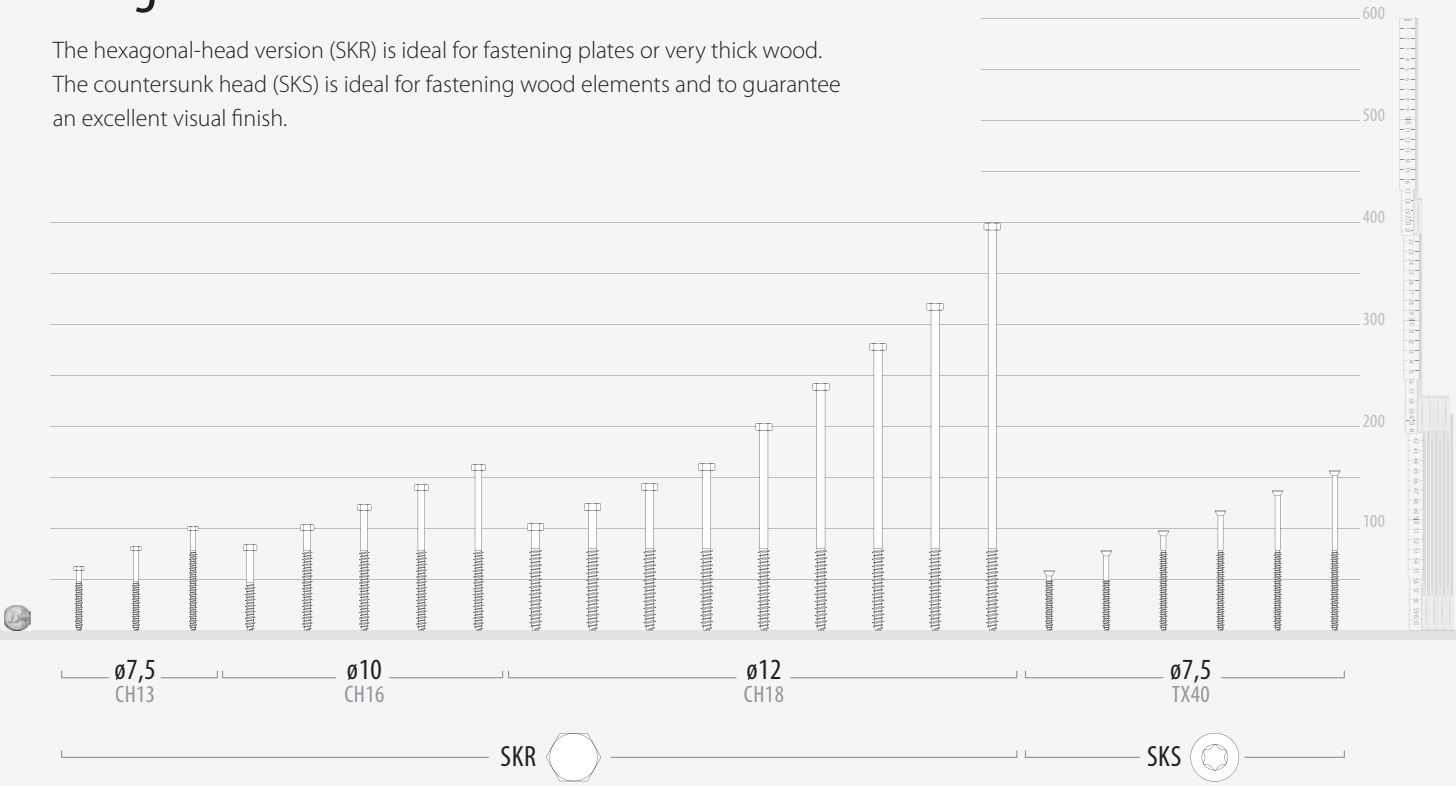
Shear angular TITAN fastening on concrete

Fastening of insulation on a cement support using a counter batten

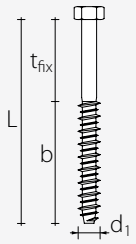
Fastening of pillar base to the ground

# Range

The hexagonal-head version (SKR) is ideal for fastening plates or very thick wood. The countersunk head (SKS) is ideal for fastening wood elements and to guarantee an excellent visual finish.



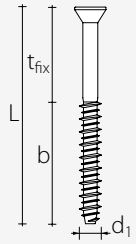
# Codes and dimensions SKR




| $d_1$ [mm] | code | L [mm] | b [mm] | $t_{fix}$ [mm] | pcs/pckg |
|---|---|---|---|---|---|
| **7,5** *CH13* | **SKR7560** | 60 | 50 | 10 | 100 |
| | **SKR7580** | 80 | 50 | 30 | 50 |
| | **SKR75100** | 100 | 80 | 20 | |
| **10** *CH16* | **SKR1080** | 80 | 50 | 30 | 50 |
| | **SKR10100** | 100 | 80 | 20 | 25 |
| | **SKR10120** | 120 | 80 | 40 | |
| | **SKR10140** | 140 | 80 | 60 | |
| | **SKR10160** | 160 | 80 | 80 | |
| **12** *CH18* | **SKR12100** | 100 | 80 | 20 | 25 |
| | **SKR12120** | 120 | 80 | 40 | |
| | **SKR12140** | 140 | 80 | 60 | |
| | **SKR12160** | 160 | 80 | 80 | |
| | **SKR12200** | 200 | 80 | 120 | |
| | **SKR12240** | 240 | 80 | 160 | |
| | **SKR12280** | 280 | 80 | 200 | |
| | **SKR12320** | 320 | 80 | 240 | |
| | **SKR12400** | 400 | 80 | 320 | |

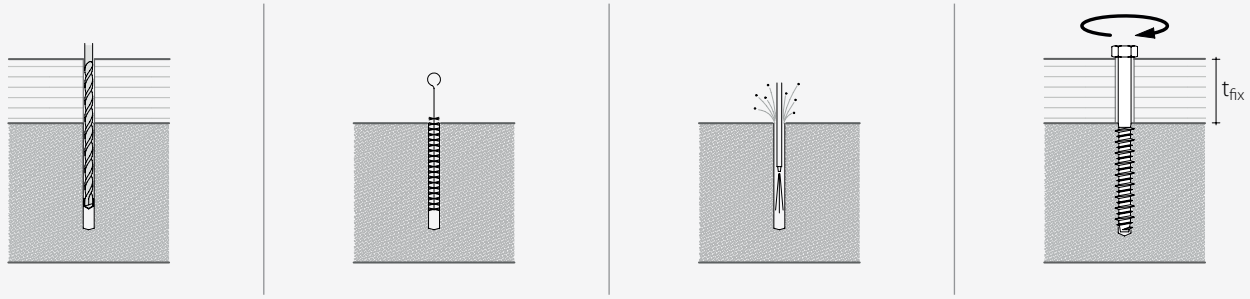
NOTE: An alternative product with the CE mark is available upon request

# Codes and dimensions SKS

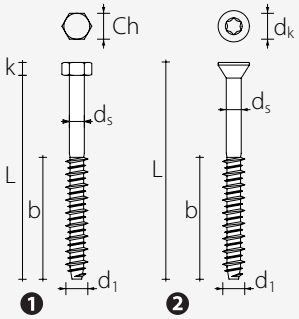



| $d_1$ [mm] | code | L [mm] | b [mm] | $t_{fix}$ [mm] | pcs/pckg |
|---|---|---|---|---|---|
| **7,5** *TX40* | **SKS7560** | 60 | 50 | 10 | 100 |
| | **SKS7580** | 80 | 50 | 30 | |
| | **SKS75100** | 100 | 80 | 20 | 50 |
| | **SKS75120** | 120 | 80 | 40 | |
| | **SKS75140** | 140 | 80 | 60 | |
| | **SKS75160** | 160 | 80 | 80 | |

# Installation



# Geometry



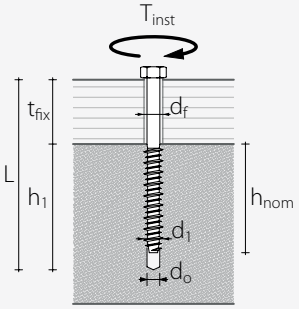

| ANCHORS | Type | ❶ SKR | | | ❷ SKS |
|---|---|---|---|---|---|
| **Nominal diameter** | **$d_1$ [mm]** | **7,5** | **10** | **12** | **7,5** |
| Wrench | Ch [mm] | 13 | 16 | 18 | - |
| Head thickness | k [mm] | 5,5 | 7,0 | 8,0 | - |
| Head diameter | $d_K$ [mm] | - | - | - | 13,4 |
| Shank diameter | $d_s$ [mm] | 5,7 | 7,7 | 9,4 | 5,7 |
| Characteristic tensile strength * | $f_{u,k}$ [N/mm²] | 988 | 1068 | 1069 | 988 |

* Values in accordance with the certificate issued by Politecnico di Milano no. 2006/5205/1)

# Installation

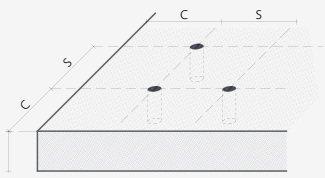
| ANCHORS | Type | ❶ SKR | | | ❷ SKS |
|---|---|---|---|---|---|
| **Nominal diameter** | **$d_1$ [mm]** | **7,5** | **10** | **12** | **6,0** |
| Diameter of pre-bored hole in concrete | $d_0$ [mm] | 6,0 | 8,0 | 10,0 | 8,0 |
| Diameter of hole in element to be fastened - wood | $d_f$ [mm] | 8,0 | 10,0 | 12,0 | - |
| Diameter of hole in element to be fastened - steel | | 8,0 - 10,0 | 10,0 - 12,0 | 12,0 - 14,0 | - |
| Tightening torque | $T_{inst}$ [mm] | 15,0 | 25,0 | 50,0 | - |

| Type | $d_1$ [mm] | L [mm] | $t_{fix}$ [mm] | $h_{nom}$ [mm] | $h_1$ [mm] |
|---|---|---|---|---|---|
| SKR | 7,5 | 60 | 10 | 50 | 60 |
| | | 80 | 30 | 50 | 60 |
| | | 100 | 20 | 80 | 90 |
| | 10 | 80 | 30 | 50 | 65 |
| | | 100 | 20 | 80 | 95 |
| | | 120 | 40 | 80 | 95 |
| | | 140 | 60 | 80 | 95 |
| | | 160 | 80 | 80 | 95 |
| | 12 | 100 | 20 | 80 | 100 |
| | | 120 | 40 | 80 | 100 |
| | | 140 | 60 | 80 | 100 |
| | | 160 | 80 | 80 | 100 |
| | | 200 | 120 | 80 | 100 |
| | | 240 | 160 | 80 | 100 |
| | | 280 | 200 | 80 | 100 |
| | | 320 | 240 | 80 | 100 |
| | | 400 | 320 | 80 | 100 |
| SKS | 7,5 | 60 | 10 | 50 | 60 |
| | | 80 | 30 | 50 | 60 |
| | | 100 | 20 | 80 | 90 |
| | | 120 | 40 | 80 | 90 |
| | | 140 | 60 | 80 | 90 |
| | | 160 | 80 | 80 | 90 |




**KEY**

$d_0$ = Diameter of pre-bored hole in concrete
$h_1$ = Hole depth
$h_{nom}$ = Nominal anchoring depth
$d_f$ = Diameter of hole in element to be fastened
$t_{fix}$ = Maximum fastening thickness
$T_{inst}$ = Tightening torque



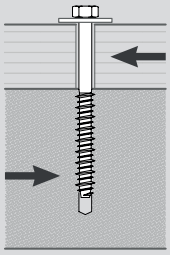

**KEY**

h = Thickness of concrete support
c = Distance from edge
s = Centre Distance

# Carpenter statics



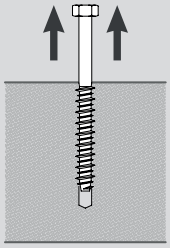
## SHEAR RESISTANCE V - NON-CRACKED CONCRETE [1]



| Anchor | Type | SKR | | | SKS |
|---|---|---|---|---|---|
| **Nominal diameter** | **$d_1$ [mm]** | **7,5** | **10** | **12** | **7,5** |
| Recommended resistance | V [kN] | 2,50 | 6,65 | 8,18 | 2,50 |
| Critical distance from edge | $c_{cr,V}$ [mm] | 70 | 110 | 130 | 70 |
| Minimum distance from edge | $c_{min,V}$ [mm] | 50 | 60 | 70 | 50 |
| Critical centre distance | $s_{cr,V}$ [mm] | 140 | 200 | 240 | 140 |
| Minimum centre distance | $s_{min,V}$ [mm] | 50 | 60 | 70 | 50 |

[1] In evaluating the total resistance of the anchor, the shear resistance of the element to be fastened (e.g. wood, steel, etc.) should be evaluated according to the material used.

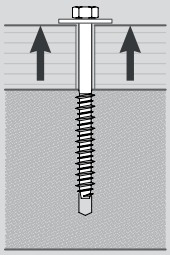
## EXTRACTION RESISTANCE N - NON-CRACKED CONCRETE [2]



| Anchor | Type | SKR | | | SKS |
|---|---|---|---|---|---|
| **Nominal diameter** | **$d_1$ [mm]** | **7,5** | **10** | **12** | **7,5** |
| Recommended resistance | N [kN] | 2,13 | 6,64 | 8,40 | 2,13 |
| Critical distance from edge | $c_{cr,N}$ [mm] | 50 | 70 | 80 | 50 |
| Minimum distance from edge | $c_{min,N}$ [mm] | 50 | 60 | 65 | 50 |
| Critical centre distance | $s_{cr,N}$ [mm] | 100 | 150 | 180 | 100 |
| Minimum centre distance | $s_{min,N}$ [mm] | 50 | 60 | 65 | 50 |
| Minimum centre distance | $s_{min,V}$ [mm] | 50 | 60 | 70 | 50 |

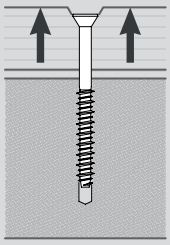
[2] In evaluating the total resistance of the anchor, the axial resistance of the element to be fastened (e.g. wood, steel, etc.) should be evaluated according to the material used.

## RESISTANCE TO HEAD PENETRATION N - WOOD ELEMENT TO BE FASTENED



| Anchor | Type | SKR WITH WASHER DIN 9021 | | |
|---|---|---|---|---|
| **Nominal diameter** | **$d_1$ [mm]** | **7,5** | **10** | **12** |
| Recommended resistance | N [kN] | 1,19 | 1,86 | 2,83 |

| Anchor | Type | SKR WITH WASHER DIN 440 | | |
|---|---|---|---|---|
| **Nominal diameter** | **$d_1$ [mm]** | **7,5** | **10** | **12** |
| Recommended resistance | N [kN] | 1,66 | 2,44 | 4,13 |



| Anchor | Type | SKS |
|---|---|---|
| **Nominal diameter** | **$d_1$ [mm]** | **7,5** |
| Recommended resistance | N [kN] | 0,72 |

### NOTE

- The recommended extraction and shear values are in accordance with Certificate no. 2006/5205/1 issued by Politecnico di Milano.
- The recommended extraction and shear values derive from tests on C20/25 non-cracked concrete, without the influence of edge and/or centre-distance effects
- The recommended values for extraction and shear are obtained considering a safety coefficient of 4 on the ultimate load at failure.