

## TENN SCI Internally Threaded Inserts



Pass a bar of correct diameter and length through the cross-hole in the SCI insert and tie it to the reinforcement to prevent it moving during pouring and vibration of the concrete.

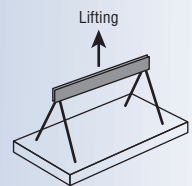
TENN SCI is an internally threaded steel anchor for use in precast, prestressed and poured-in-place concrete. It is placed in the formwork prior to the casting of concrete. After the concrete is cured, SCI provides a socket fastening point for attachment of threaded rods, bolts, eye bolts, etc.

SCI's hexagonal foot transfers the load into the concrete. High working loads are achieved even with relatively short anchor length. For extra strength, a bar can be inserted into the cross hole.

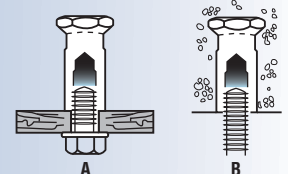
- Designed for pre-planned fastening in heavily reinforced concrete. Pre-planned location of inserts avoids the difficulties of drilling hard concrete and the high costs associated with installation of post-installed anchors.
- Installed with bolts through holes in steel or wood formwork.
- Dependable, split-free anchorages.
- Suitable for dynamic loading conditions.
- May be used in the tension zones of concrete.
- No expansion stresses – therefore allowing closer edge distance and spacing.

### General Applications and Uses

**Precast concrete construction:** as a cast-in lifting socket for transporting wall and floor slab, fascia panels, etc. A reinforcement bar must be inserted through the cross hole to ensure the proper transmission of the load from the socket into the concrete. Check that the required concrete strength has been attained prior to lifting.



**Poured concrete construction:** as a cast-in socket in multi-storey buildings using plywood or metal deck formwork for floors. SCI is bolted to the forms (A) before pouring of concrete. After the concrete is set, the socket provides easy attachment for threaded rods that carry the racks for pipework, cable trays, bus ducts, HVAC ducts, electrical conduits (B).



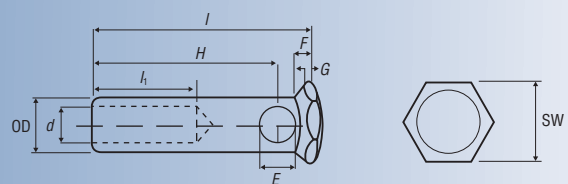
### SAFE WORKING LOADS (without cross bar)

Product ID	SCI Minimum Tensile Strength kN	Minimum Breaking Loads UTS 4.6 Bolt/Rod		Characteristic Cone Strength C20/25 Concrete kN	Safe Working Loads* kN
		Tension kN	Shear kN		
SCI.10045	40	23.2	14.3	18.1	7.2
SCI.12050	37	33.7	20.8	24.5	10.4
SCI.12070	37	33.7	20.8	35.1	10.4
SCI.12095	37	33.7	20.8	55.6	10.4

\* Based on UTS 4.6 Steel

### SPACING AND EDGE DISTANCE

Product ID	Minimum Centre Spacing $s_{min}$ , mm	Minimum Edge Distance $c_{min}$ , mm
SCI.10045	150	75
SCI.12050	150	75
SCI.12070	150	75
SCI.12095	150	75



### Tenn SCI Product Range

Product ID	Anchor Size/Internal Thread Diam. d	Internal Thread Length $l_1$ , mm	Outside Diam. OD, mm	Cross Hole Diam. E, mm	Foot Across Flats SW, mm	Overall Length l, mm
SCI.10045	M10	25	17	8	22	45
SCI.12050	M12	25	17	8	22	55
SCI.12070	M12	25	17	8	22	70
SCI.12095	M12	25	17	8	22	95

## TENN SPIKERS

### Internally Threaded Inserts



While post-installed anchors are installed in holes drilled in hardened concrete, cast-in-place (CIP) anchors are positioned in the formwork before the concrete is poured. CIP anchors are therefore ideal when fastening points are required in heavily reinforced concrete because the difficulties of drilling can be avoided.

Another benefit of CIP anchors is that the reinforcement near the anchorage may be sized and configured to carry more effectively the loads transmitted by the anchorage into the base material.

Tenn Spikers obtain their holding power in concrete through bearing stresses (mechanical interlock) between their large heads and the concrete.

Tenn Spikers are installed onto plywood formwork used to support a poured concrete floor, roof or wall slab. After the concrete has cured and the formwork boards are stripped away, Spiker's colour-coded flange is clearly visible on the concrete surface, allowing insertion of steel threaded rods or bolts in sizes ranging from 1/4" to 3/4".

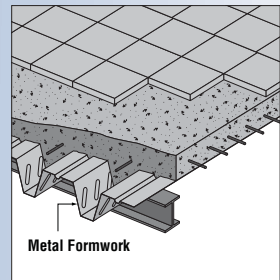
## TENN SPRING HANGERS

### Internally Threaded Inserts

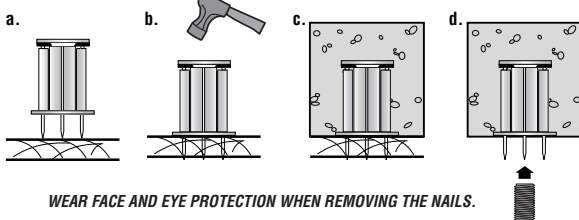


Tenn Spring Hangers are cast-in-place sockets designed to provide reliable attachment points for bolts and drop rods for overhead suspensions e.g. for ceilings, pipework and mechanical services.

Spring Hangers are installed onto metal sheet formwork used to support a poured concrete floor. After the concrete has cured, Spring Hangers' colour-coded plastic flange is clearly visible on the deck undersides, allowing connection of steel threaded rods or bolts in sizes ranging from 1/4" to 3/4".



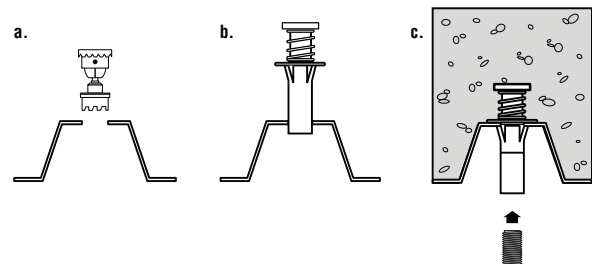
#### INSTALLATION PROCEDURE



**WEAR FACE AND EYE PROTECTION WHEN REMOVING THE NAILS.**

- Before concrete is poured, position Spiker on the wooden formwork.
- Strike the centre of Spiker's head to nail the anchor onto the formwork.
- Spiker becomes integral with the concrete after the concrete is cured.
- After the boards are stripped away, the nails are exposed. If desired, the break-off nails can be clipped off. Insert bolt or threaded rod.

#### INSTALLATION PROCEDURE



- Before concrete is poured, drill hole on the metal decking with a holesaw.
- Install Spring Hanger.
- Spring Hanger becomes integral with the concrete after the concrete is cured.

#### Tenn Spiker Product Range

Product ID	Anchor Size & internal Thread Diam. d, inch	Colour Code	Embedment Depth $h_{ef}$ , mm	Critical Spacing $s_{cr}$ , mm	Critical Edge Distance $c_{cr}$ , mm	Ultimate Loads* in C20/25 Concrete	
						Tension $N_u$ , kN	Shear $V_u$ , kN
TCS.502	1/4"-BSW	Brown	50	230	150	18.9	12.1
TCS.503	3/8"-BSW	Green	50	230	150	18.9	23.4
TCS.504	1/2"-BSW	Yellow	50	230	150	18.0	31.9
TCS.505	5/8"-BSW	Red	50	230	150	20.2	26.7
TCS.506	3/4"-BSW	Purple	50	230	150	20.2	26.7

\*A safety factor of 4 is recommended for single anchors under static loading conditions.

#### Tenn Spring Hanger Product Range

Product ID	Anchor Size & internal Thread Diam. d, inch	Colour Code	Embedment Depth $h_{ef}$ , mm	Critical Spacing $s_{cr}$ , mm	Critical Edge Distance $c_{cr}$ , mm	Ultimate Loads* in C20/25 Concrete	
						Tension $N_u$ , kN	Shear $V_u$ , kN
TSH.602	1/4"-BSW	Brown	55	250	165	22.5	12.1
TSH.603	3/8"-BSW	Green	55	250	165	22.5	23.4
TSH.604	1/2"-BSW	Yellow	55	250	165	22.5	31.9
TSH.605	5/8"-BSW	Red	55	250	165	24.0	26.7
TSH.606	3/4"-BSW	Purple	55	250	165	24.0	26.7

\*A safety factor of 4 is recommended for single anchors under static loading conditions.