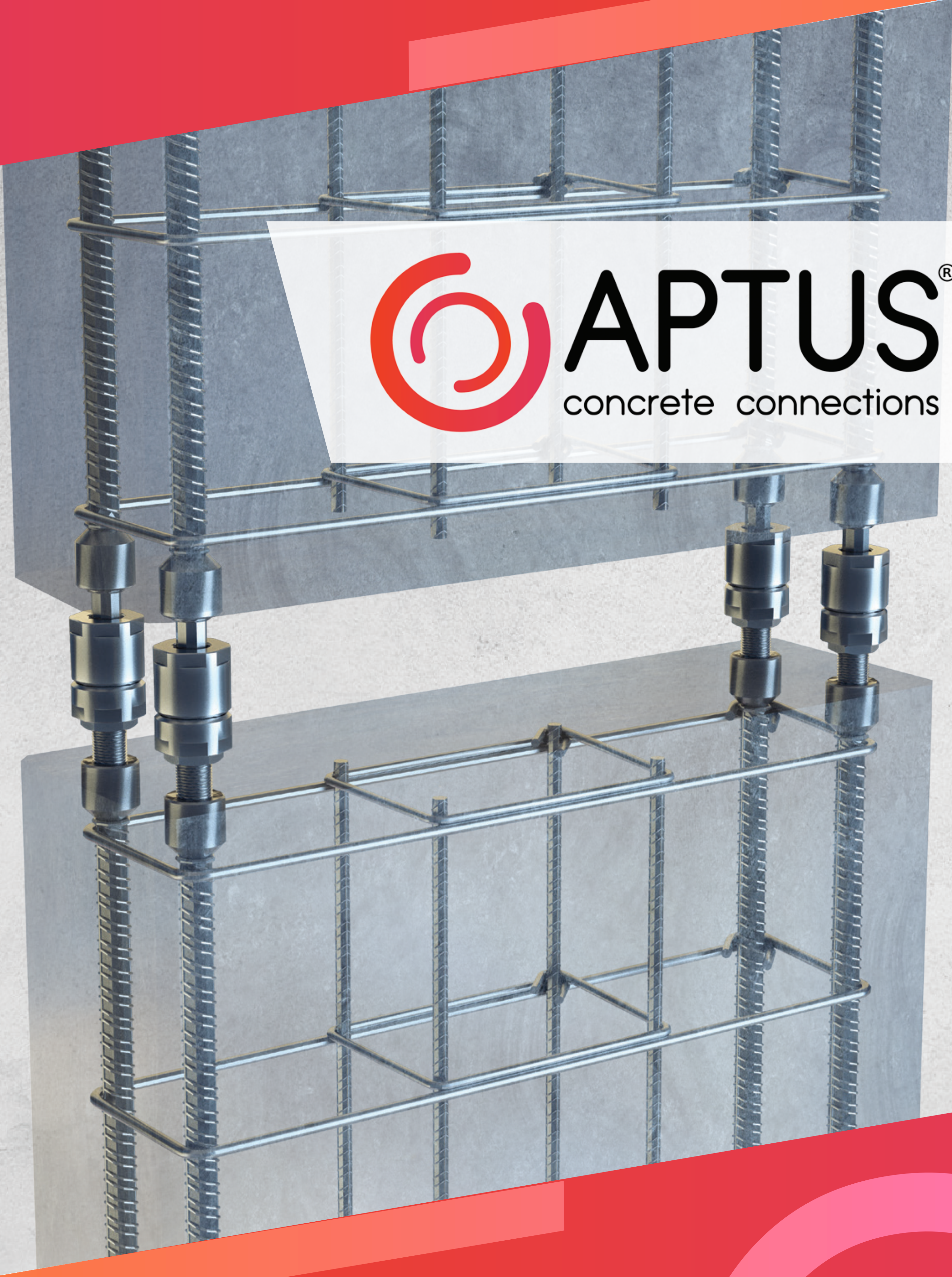
APTUS®

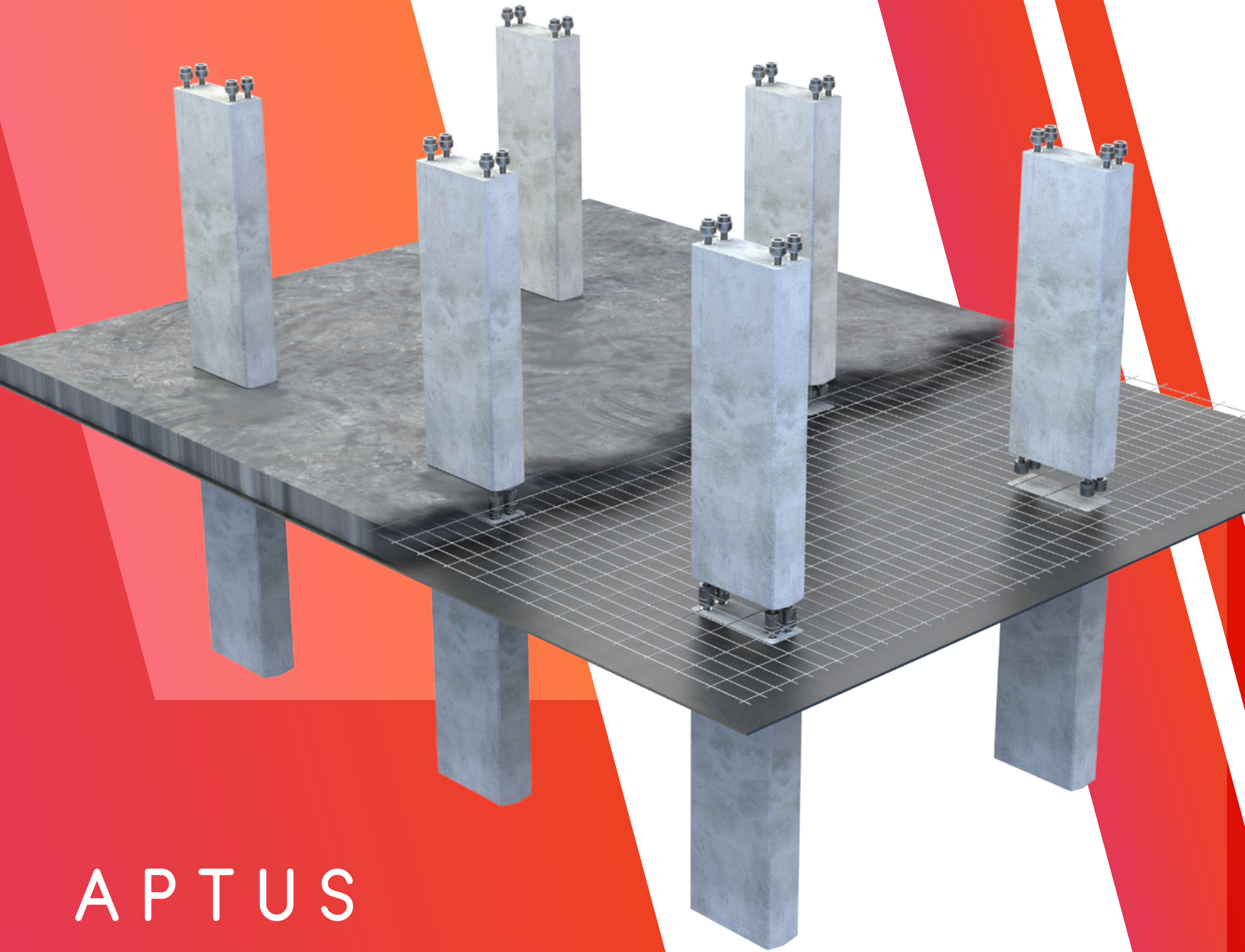
concrete connections



ISO 9001:2015

UKAS MANAGEMENT SYSTEMS 8327

AUSTRALIAN CATALOGUE
ISSUED SEPTEMBER 2019



APTUS ADVANTAGE

Effectively moves the construction of vertical elements off the critical path. Substantially reduces construction cycle times with patented technology.

- Faster, safer and more efficient way to design & construct
- Easy to manufacture, easy to install
- No propping, no grouting, no further work required after installation
- Removes an entire series of in situ trades associated with vertical elements - steel fixers, form workers, concreters, etc.
- Provides unimpeded access for installation of horizontal form work.
- Provides electrical conductivity for lightning protection systems
- Reduction in the number of crane movements & on-site storage of formwork, props, etc.
- Enhances site safety removing congestion and clutter

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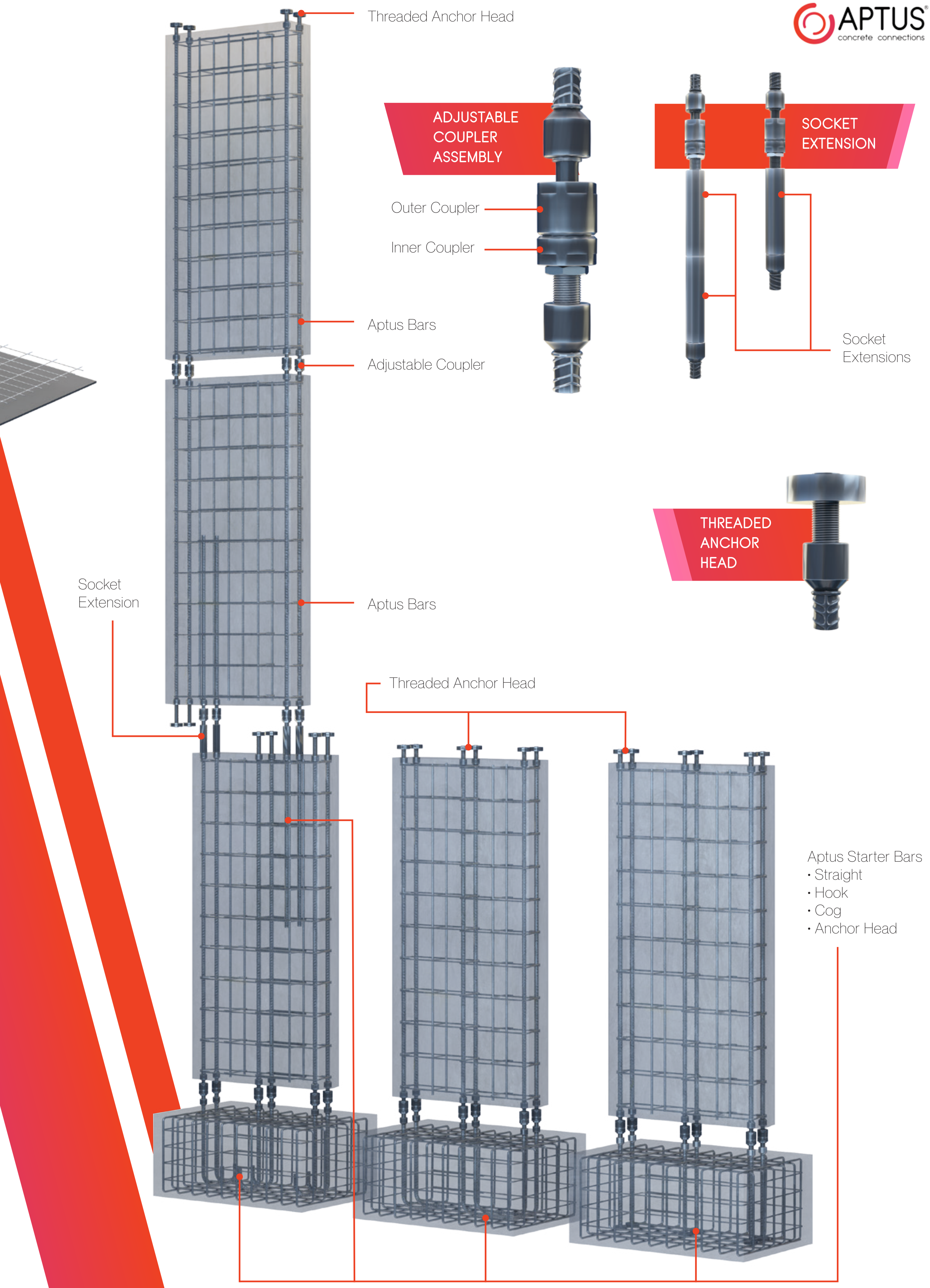
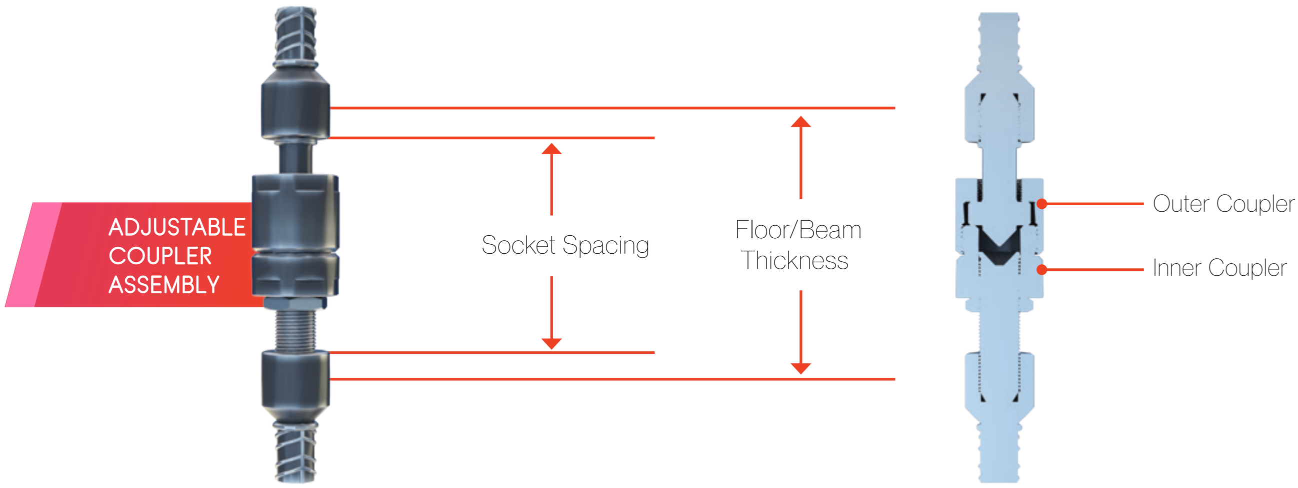


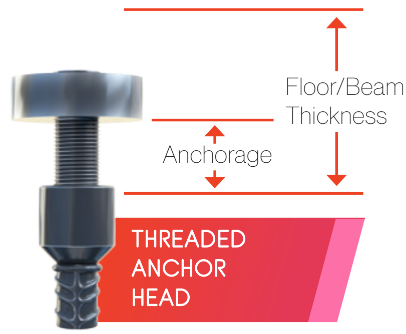


ADJUSTABLE COUPLER ASSEMBLIES

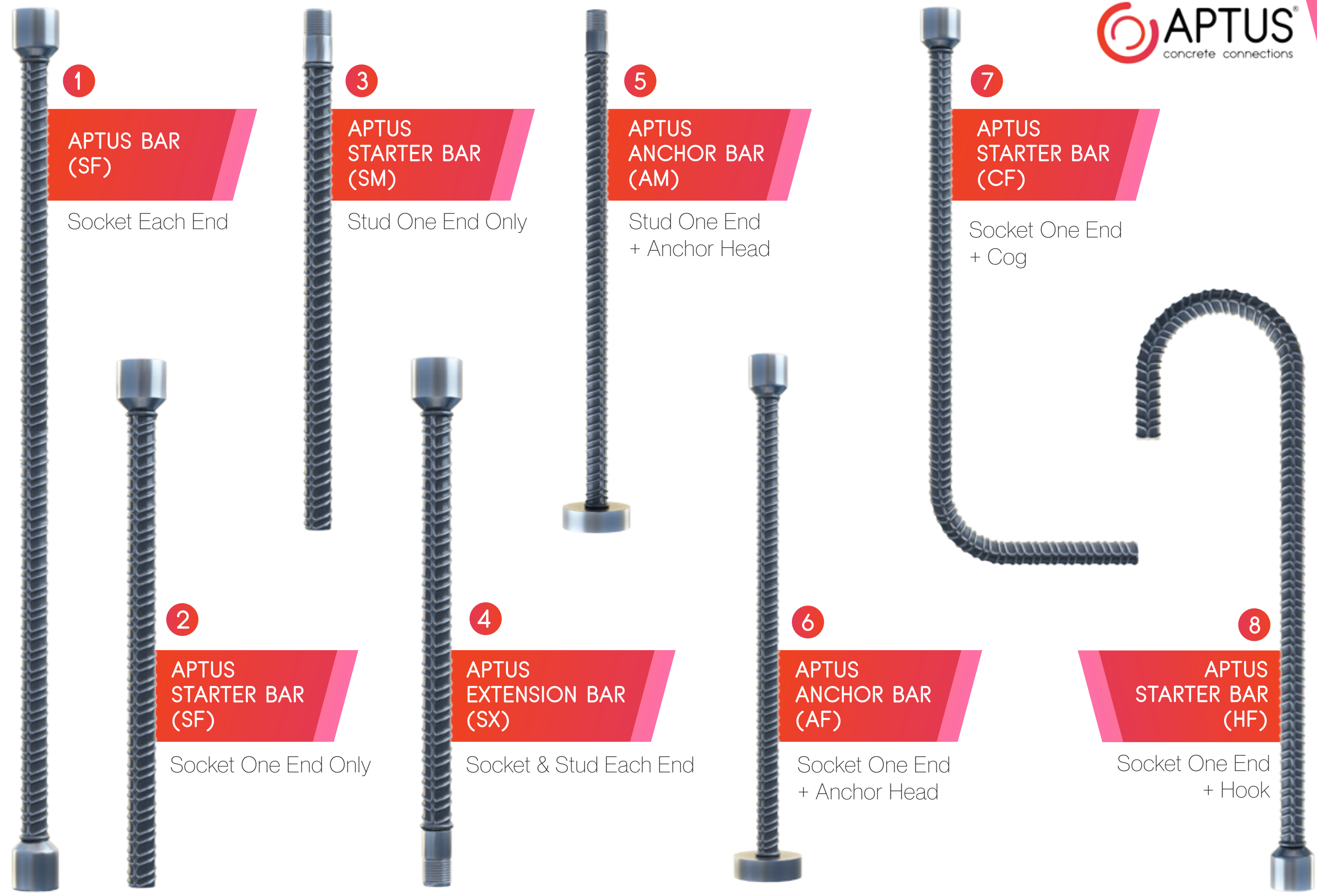
	Socket Spacing	Floor/Beam Thickness Min	Floor/Beam Thickness Max	ACS - 24 Series Inner Coupler + Outer Coupler = ACS-24-(Socket Spacing)	ACS - 32 Series Inner Coupler + Outer Coupler = ACS-32-(Socket Spacing)	ACS - 40 Series Inner Coupler + Outer Coupler = ACS-40-(Socket Spacing)
No Socket Extensions	160	165	185	SA-24IC55-92 + SA-24OC55 = ACS-24-160	SA-32IC65-107 + SA-32OC65 = ACS-32-160	SA-40IC75-107 + SA-40OC75 = ACS-40-160
	180	186	215	SA-24IC55-112 + SA-24OC55 = ACS-24-180	SA-32IC65-127 + SA-32OC65 = ACS-32-180	SA-40IC75-127 + SA-40OC75 = ACS-40-180
	210	216	245	SA-24IC55-142 + SA-24OC55 = ACS-24-210	SA-32IC65-157 + SA-32OC65 = ACS-32-210	SA-40IC75-157 + SA-40OC75 = ACS-40-210
	240	246	275	SA-24IC55-172 + SA-24OC55 = ACS-24-240	SA-32IC65-187 + SA-32OC65 = ACS-32-240	SA-40IC75-187 + SA-40OC75 = ACS-40-240
	270	276	305	SA-24IC55-202 + SA-24OC55 = ACS-24-270	SA-32IC65-217 + SA-32OC65 = ACS-32-270	SA-40IC75-217 + SA-40OC75 = ACS-40-270
	300	306	335	SA-24IC55-232 + SA-24OC55 = ACS-24-300	SA-32IC65-247 + SA-32OC65 = ACS-32-300	SA-40IC75-247 + SA-40OC75 = ACS-40-300
	330	336	365	SA-24IC55-262 + SA-24OC55 = ACS-24-330	SA-32IC65-277 + SA-32OC65 = ACS-32-330	SA-40IC75-277 + SA-40OC75 = ACS-40-330
	360	366	395	SA-24IC55-292 + SA-24OC55 = ACS-24-360	SA-32IC65-307 + SA-32OC65 = ACS-32-360	SA-40IC75-307 + SA-40OC75 = ACS-40-360
	390	396	425	SA-24IC55-322 + SA-24OC55 = ACS-24-390	SA-32IC65-337 + SA-32OC65 = ACS-32-390	SA-40IC75-337 + SA-40OC75 = ACS-40-390
	420	426	455	SA-24IC55-352 + SA-24OC55 = ACS-24-420	SA-32IC65-367 + SA-32OC65 = ACS-32-420	SA-40IC75-367 + SA-40OC75 = ACS-40-420
	450	456	485	SA-24IC55-382 + SA-24OC55 = ACS-24-450	SA-32IC65-397 + SA-32OC65 = ACS-32-450	SA-40IC75-397 + SA-40OC75 = ACS-40-450
	480	486	515	SA-24IC55-412 + SA-24OC55 = ACS-24-480	SA-32IC65-427 + SA-32OC65 = ACS-32-480	SA-40IC75-427 + SA-40OC75 = ACS-40-480
Using 1 Socket Extension	510	516	545	330EX28 + SA-24IC55-112 + SA-24OC55 = ACS-24-510	330EX36 + SA-32IC65-127 + SA-32OC65 = ACS-32-510	330EX45 + SA-40IC75-127 + SA-40OC75 = ACS-40-510
	540	546	575	330EX28 + SA-24IC55-142 + SA-24OC55 = ACS-24-540	330EX36 + SA-32IC65-157 + SA-32OC65 = ACS-32-540	330EX45 + SA-40IC75-157 + SA-40OC75 = ACS-40-540
	570	576	605	330EX28 + SA-24IC55-172 + SA-24OC55 = ACS-24-570	330EX36 + SA-32IC65-187 + SA-32OC65 = ACS-32-570	330EX45 + SA-40IC75-187 + SA-40OC75 = ACS-40-570
	600	606	635	330EX28 + SA-24IC55-202 + SA-24OC55 = ACS-24-600	330EX36 + SA-32IC65-217 + SA-32OC65 = ACS-32-600	330EX45 + SA-40IC75-217 + SA-40OC75 = ACS-40-600
	630	636	665	330EX28 + SA-24IC55-232 + SA-24OC55 = ACS-24-630	330EX36 + SA-32IC65-247 + SA-32OC65 = ACS-32-630	330EX45 + SA-40IC75-247 + SA-40OC75 = ACS-40-630
	660	666	695	330EX28 + SA-24IC55-262 + SA-24OC55 = ACS-24-660	330EX36 + SA-32IC65-277 + SA-32OC65 = ACS-32-660	330EX45 + SA-40IC75-277 + SA-40OC75 = ACS-40-660
	690	696	725	330EX28 + SA-24IC55-292 + SA-24OC55 = ACS-24-690	330EX36 + SA-32IC65-307 + SA-32OC65 = ACS-32-690	330EX45 + SA-40IC75-307 + SA-40OC75 = ACS-40-690
	720	726	755	330EX28 + SA-24IC55-322 + SA-24OC55 = ACS-24-720	330EX36 + SA-32IC65-337 + SA-32OC65 = ACS-32-720	330EX45 + SA-40IC75-337 + SA-40OC75 = ACS-40-720
	750	756	785	330EX28 + SA-24IC55-352 + SA-24OC55 = ACS-24-750	330EX36 + SA-32IC65-367 + SA-32OC65 = ACS-32-750	330EX45 + SA-40IC75-367 + SA-40OC75 = ACS-40-750
	780	786	815	330EX28 + SA-24IC55-382 + SA-24OC55 = ACS-24-780	330EX36 + SA-32IC65-397 + SA-32OC65 = ACS-32-780	330EX45 + SA-40IC75-397 + SA-40OC75 = ACS-40-780
	810	816	845	330EX28 + SA-24IC55-412 + SA-24OC55 = ACS-24-810	330EX36 + SA-32IC65-427 + SA-32OC65 = ACS-32-810	330EX45 + SA-40IC75-427 + SA-40OC75 = ACS-40-810
Using 2 Socket Extensions	840	846	875	2 x 330EX28 + SA-24IC55-112 + SA-24OC55 = ACS-24-840	2 x 330EX36 + SA-32IC65-127 + SA-32OC65 = ACS-32-840	2 x 330EX45 + SA-40IC75-127 + SA-40OC75 = ACS-40-840
	870	876	905	2 x 330EX28 + SA-24IC55-142 + SA-24OC55 = ACS-24-870	2 x 330EX36 + SA-32IC65-157 + SA-32OC65 = ACS-32-870	2 x 330EX45 + SA-40IC75-157 + SA-40OC75 = ACS-40-870
	900	906	935	2 x 330EX28 + SA-24IC55-172 + SA-24OC55 = ACS-24-900	2 x 330EX36 + SA-32IC65-187 + SA-32OC65 = ACS-32-900	2 x 330EX45 + SA-40IC75-187 + SA-40OC75 = ACS-40-900
	930	936	965	2 x 330EX28 + SA-24IC55-202 + SA-24OC55 = ACS-24-930	2 x 330EX36 + SA-32IC65-217 + SA-32OC65 = ACS-32-930	2 x 330EX45 + SA-40IC75-217 + SA-40OC75 = ACS-40-930
	960	966	995	2 x 330EX28 + SA-24IC55-232 + SA-24OC55 = ACS-24-960	2 x 330EX36 + SA-32IC65-247 + SA-32OC65 = ACS-32-960	2 x 330EX45 + SA-40IC75-247 + SA-40OC75 = ACS-40-960
	990	996	1025	2 x 330EX28 + SA-24IC55-262 + SA-24OC55 = ACS-24-990	2 x 330EX36 + SA-32IC65-277 + SA-32OC65 = ACS-32-990	2 x 330EX45 + SA-40IC75-277 + SA-40OC75 = ACS-40-990
	1020	1026	1055	2 x 330EX28 + SA-24IC55-292 + SA-24OC55 = ACS-24-1020	2 x 330EX36 + SA-32IC65-307 + SA-32OC65 = ACS-32-1020	2 x 330EX45 + SA-40IC75-307 + SA-40OC75 = ACS-40-1020
	1050	1056	1085	2 x 330EX28 + SA-24IC55-322 + SA-24OC55 = ACS-24-1050	2 x 330EX36 + SA-32IC65-337 + SA-32OC65 = ACS-32-1050	2 x 330EX45 + SA-40IC75-337 + SA-40OC75 = ACS-40-1050
	1080	1086	1115	2 x 330EX28 + SA-24IC55-352 + SA-24OC55 = ACS-24-1080	2 x 330EX36 + SA-32IC65-367 + SA-32OC65 = ACS-32-1080	2 x 330EX45 + SA-40IC75-367 + SA-40OC75 = ACS-40-1080
	1110	1116	1145	2 x 330EX28 + SA-24IC55-382 + SA-24OC55 = ACS-24-1110	2 x 330EX36 + SA-32IC65-397 + SA-32OC65 = ACS-32-1110	2 x 330EX45 + SA-40IC75-397 + SA-40OC75 = ACS-40-1110
	1140	1146	1175	2 x 330EX28 + SA-24IC55-412 + SA-24OC55 = ACS-24-1140	2 x 330EX36 + SA-32IC65-427 + SA-32OC65 = ACS-32-1140	2 x 330EX45 + SA-40IC75-427 + SA-40OC75 = ACS-40-1140

THREADED ANCHOR HEADS

Anchorage	Minimum Floor/Beam Thickness	ACS - 24 Series	ACS - 32 Series	ACS - 40 Series
50	190	SA-24AH28-112	SA-32AH36-127	SA-40AH45-127
80	210	SA-24AH28-142	SA-32AH36-157	SA-40AH45-157
110	240	SA-24AH28-172	SA-32AH36-187	SA-40AH45-187
140	270	SA-24AH28-202	SA-32AH36-217	SA-40AH45-217
170	300	SA-24AH28-232	SA-32AH36-247	SA-40AH45-247
200	330	SA-24AH28-262	SA-32AH36-277	SA-40AH45-277
230	360	SA-24AH28-292	SA-32AH36-307	SA-40AH45-307
260	390	SA-24AH28-322	SA-32AH36-337	SA-40AH45-337
290	420	SA-24AH28-352	SA-32AH36-367	SA-40AH45-367
320	450	SA-24AH28-382	SA-32AH36-397	SA-40AH45-397
350	480	SA-24AH28-412	SA-32AH36-427	SA-40AH45-427

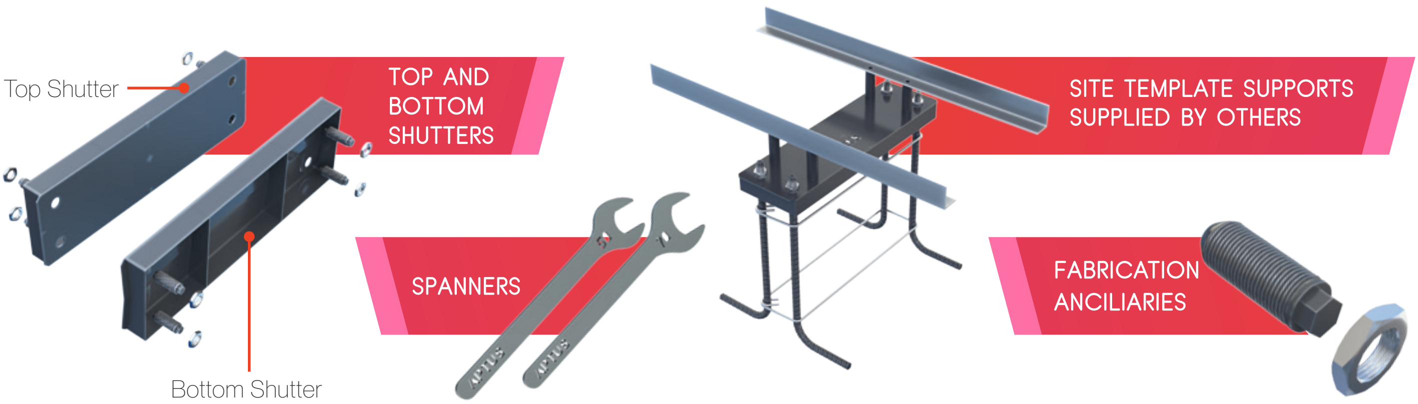


APTUS concrete connections



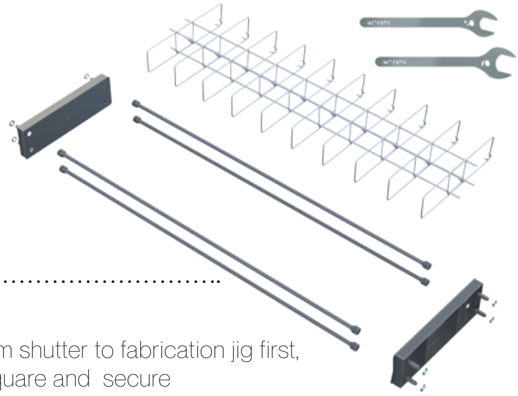
APTUS BARS

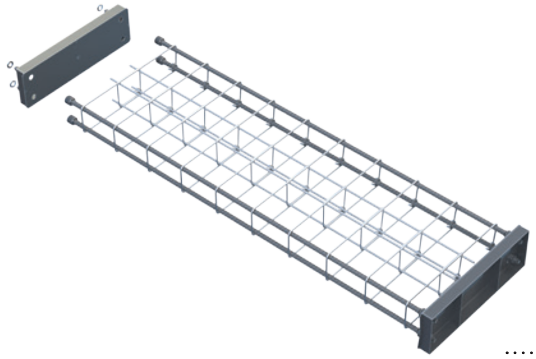
Bar Type		Aptus Bar Series - Standard bar configurations shown below, transition requirements using different Aptus socket sizes can be adopted to any size rebar.					
	Description	N20	N24	N28	N32	N36	N40
1	APTUS BAR (SF) Socket Each End	SB-N20-SF-2424	SB-N24-SF-2424	SB-N28-SF-3232	SB-N32-SF-3232	SB-N36-SF-4040	SB-N40-SF-4040
2	APTUS STARTER BAR (SF) Socket One End Only	SB-N20-SF-0024	SB-N24-SF-0024	SB-N28-SF-0032	SB-N32-SF-0032	SB-N36-SF-0040	SB-N40-SF-0040
3	APTUS STARTER BAR (SM) Stud One End Only	SB-N20-SM-0024	SB-N24-SM-0024	SB-N28-SM-0032	SB-N32-SM-0032	SB-N36-SM-0040	SB-N40-SM-0040
4	APTUS EXTENSION BAR (SX) Socket & Stud Each End	SB-N20-SX-2424	SB-N24-SX-2424	SB-N28-SX-3232	SB-N32-SX-3232	SB-N36-SX-4040	SB-N40-SX-4040
5	APTUS ANCHOR BAR (AM) Stud One End + Anchor Head	SB-N20-AM-2420	SB-N24-AM-2424	SB-N28-AM-3232	SB-N32-AM-3232	SB-N36-AM-4040	SB-N40-AM-4040
6	APTUS ANCHOR BAR (AF) Socket One End + Anchor Head	SB-N20-AF-2420	SB-N24-AF-2424	SB-N28-AF-3232	SB-N32-AF-3232	SB-N36-AF-4040	SB-N40-AF-4040
7	APTUS STARTER BAR (CF) Socket One End + Cog	SB-N20-CF-0024	SB-N24-CF-0024	SB-N28-CF-0032	SB-N32-CF-0032	SB-N36-CF-0040	SB-N40-CF-0040
8	APTUS STARTER BAR (HF) Socket One End + Hook	SB-N20-HF-0024	SB-N24-HF-0024	SB-N28-HF-0032	SB-N32-HF-0032	SB-N36-HF-0040	SB-N40-HF-0040



FABRICATION PROCESS

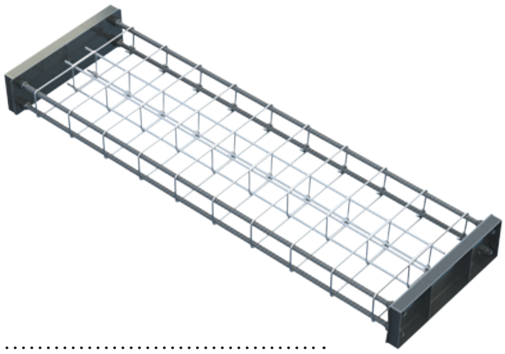
- Aptus Bars, End Shutters & Fabrication Ancillaries supplied by Aptus
- Aptus End Shutters can be fabricated by precast manufacturers themselves but must strictly adhere to Aptus specifications
- Conventional reinforcing steel supplied by others

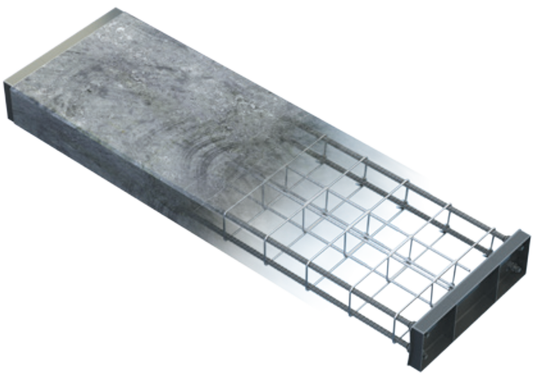




- Always fix the bottom shutter to fabrication jig first, ensuring it is held square and secure
- Aptus Bars can then be secured to the bottom shutter and conventional reinforcing placed loosely in position
- Securing the Aptus bars to the bottom shutter first ensures the later fitment of the Outer Couplers is consistent - this provides for a much quicker installation process on site

- The top shutter is then secured to the Aptus Bars and the conventional reinforcement fixed in position
- There is no jig required to position the top shutter, it is simply held in position by the Aptus Bars
- Any tolerance adjustment in the Aptus Bars (+/- 5mm) is always taken into account at the top of the precast element - any discrepancy is taken up later through the adjustment provided by the Inner Coupler





- The fabricated reinforcement cage is then placed on the casting bed
- Industry standard side shuters are simply clamped in position against the top and bottom shutters on the casting bed
- Standard concrete placement processes are then adopted in accordance with individual precast manufacturer's QA System

- Following normal post-production procedures, Outer Coupler Assemblies are secured into the bottom of the precast element and Inner Coupler Assemblies are secured into the top of the element
- Precast Elements are then placed into storage and are now ready for delivery to site

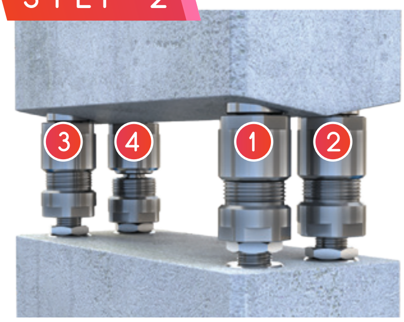
INSTALLATION PROCESS

APTUS concrete connections

STEP 1

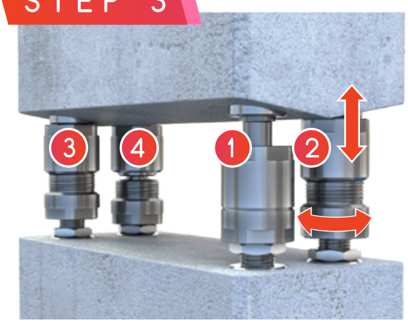
- Inner Couplers 1, 2, & 3 are set to the required RL
- Inner Coupler 4 (and all other couplers) are wound down to avoid interference
- Inner Coupler 1 is secured in position with its lock nut

STEP 2



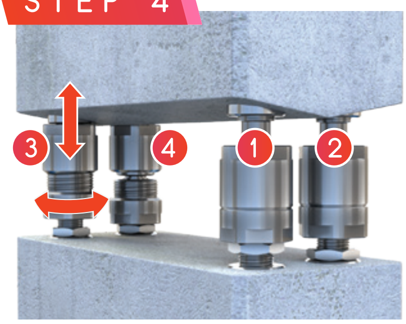
- The precast element is lowered into position and seated onto the three pre-set couplers
- Note Coupler 4 is not in position
- Levelling of the precast element will utilise only three couplers

STEP 3



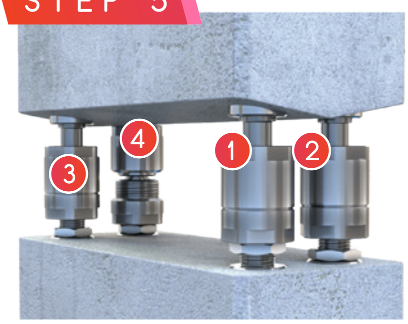
- Outer Coupler 1 is engaged with its Inner Coupler
- Subject to the vertical alignment required in the first direction, Inner Coupler 2 is rotated left or right to lower or raise the precast element accordingly

STEP 4



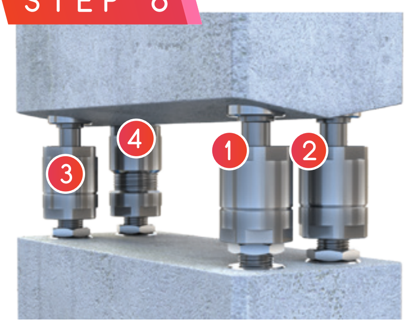
- When the required vertical alignment is achieved in the first direction, Outer Coupler 2 is engaged with its Inner Coupler
- Subject to the vertical alignment required in the second direction, Inner Coupler 3 is rotated left or right to lower or raise the precast element accordingly in that direction

STEP 5



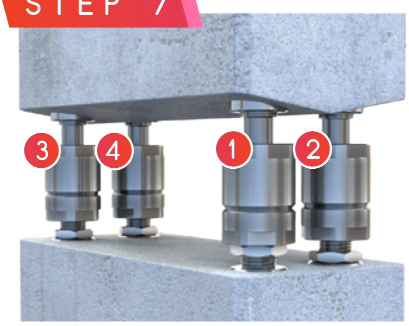
- When the required vertical alignment is achieved in the second direction, Outer Coupler 3 is engaged with its Inner Coupler

STEP 6



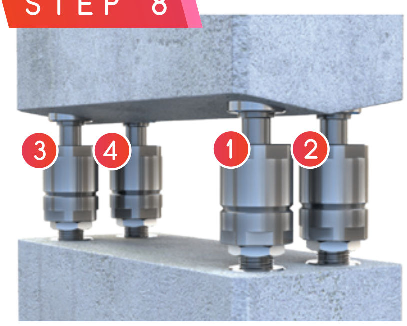
- Inner Coupler 4 (and all other couplers) can now be wound up to engage firmly against the Seating Stud

STEP 7

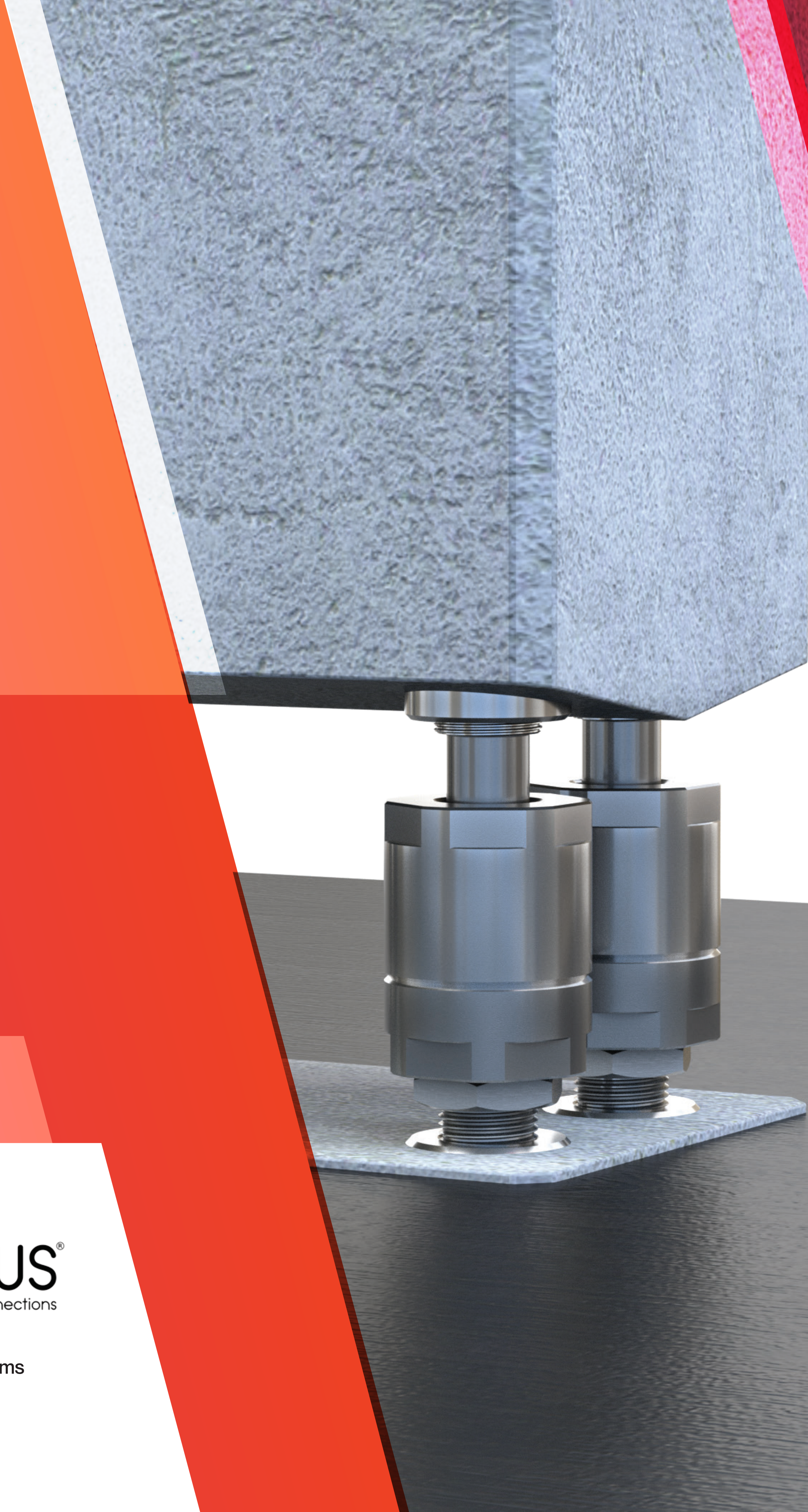


- Outer Coupler 4 is engaged with its Inner Coupler (as with all other couplers)
- Crane can be disengaged

STEP 8



- Secure all remaining Lock Nuts



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