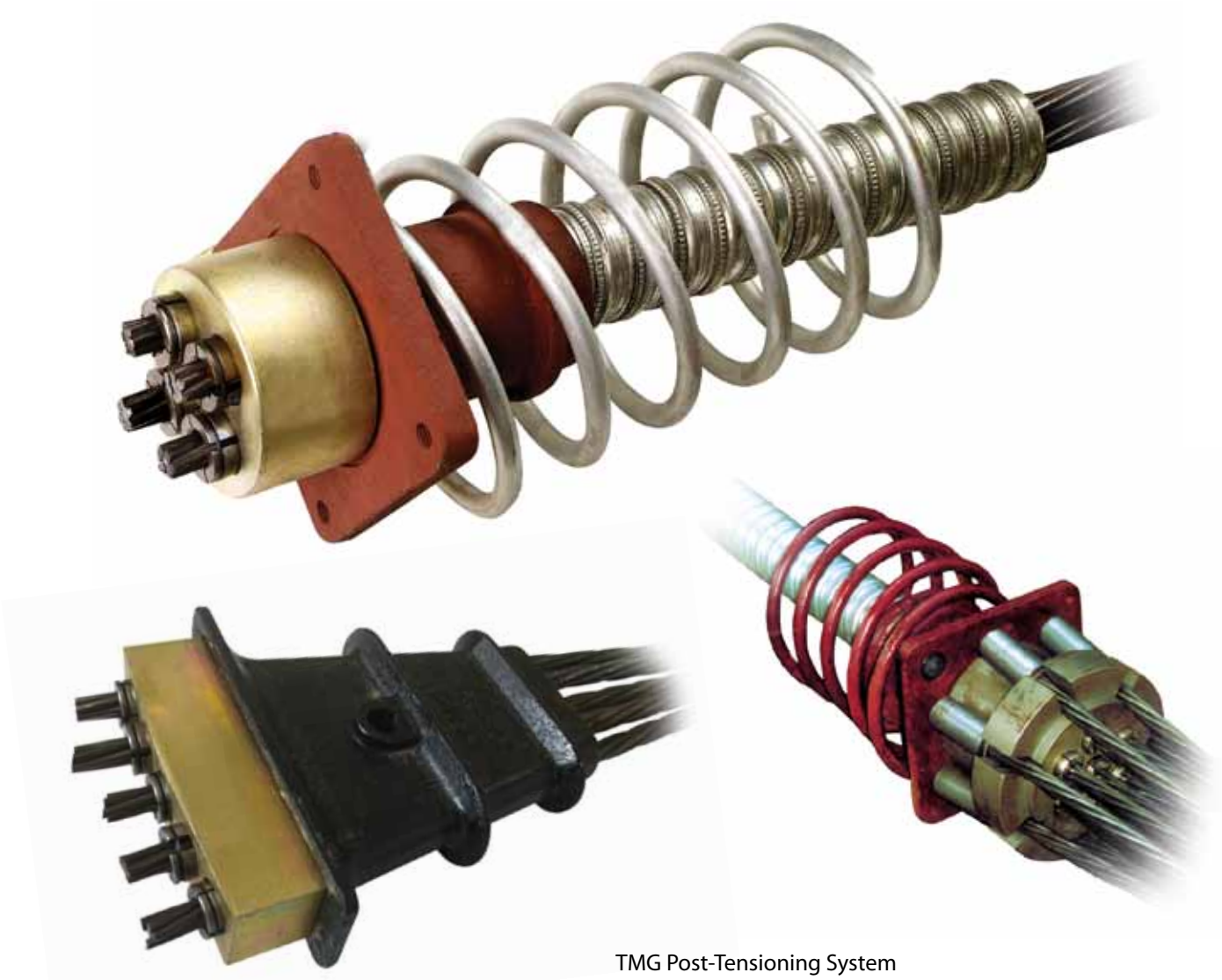
TMG

TMG Post-Tensioning System

TMG Post-Tensioning System

Post-tensioning is where prestress is permanently introduced into the concrete structure after the concrete has hardened. By stressing properly positioned high strength prestressing tendons, TMG Post-Tensioning System introduces constructive stress into the concrete structure, thus increasing overall productivity and usage efficiency of construction materials. TMG Post-Tensioning System covers the whole spectrum of engineering, from bridge construction, buildings, to civil applications, both above & underground.

TMG Post-Tensioning System complies with international standards and is widely accepted in many countries. We are also well known for our reliability and high performance products.



TMG Post-Tensioning System

Reference Photos for TMG Post-Tensioning System

Precast Yard

Installation of Anchors for Beam Stressing

Mono Jack Stressing in Progress

Installation of Stressing Jack

Cable Stayed Bridge

Arch Bridge

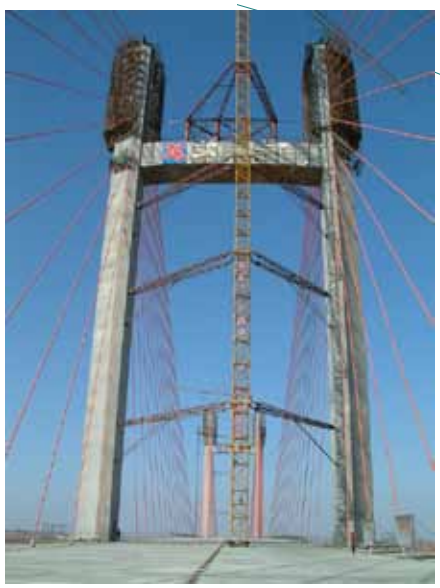
Reference Photos for TMG Post-Tensioning System

Tendons Profile

Stranding

Preparation for Stressing

Pedestrian Bridge



Cable Stayed Bridge

Flyover

TMG Stress Anchors

Stress Anchors (also commonly known as Live Anchors) is the most widely used form of post-tensioning system. It consists of Anchor, Casting, Wedge and Bursting Reinforcement. It is most commonly found in bonded post-tensioning using strands as tendons in concrete structure and rock/soil anchoring structure.

Slab On Grade (unbounded) is also increasingly popular with industrial structures where joints are the major weakness in these concrete structures. Temperature variations, high traffic, heavy loads and vehicle wheels abrasion are major factors contributing to cracks, deformations and curling in these concrete structures. These failures increases maintenance cost and also reduces productivity.

TMG unbounded post-tensioning for Slab On Grade can eliminate these problems, and it can also optimizes the overall cost to the client for the entire structure.

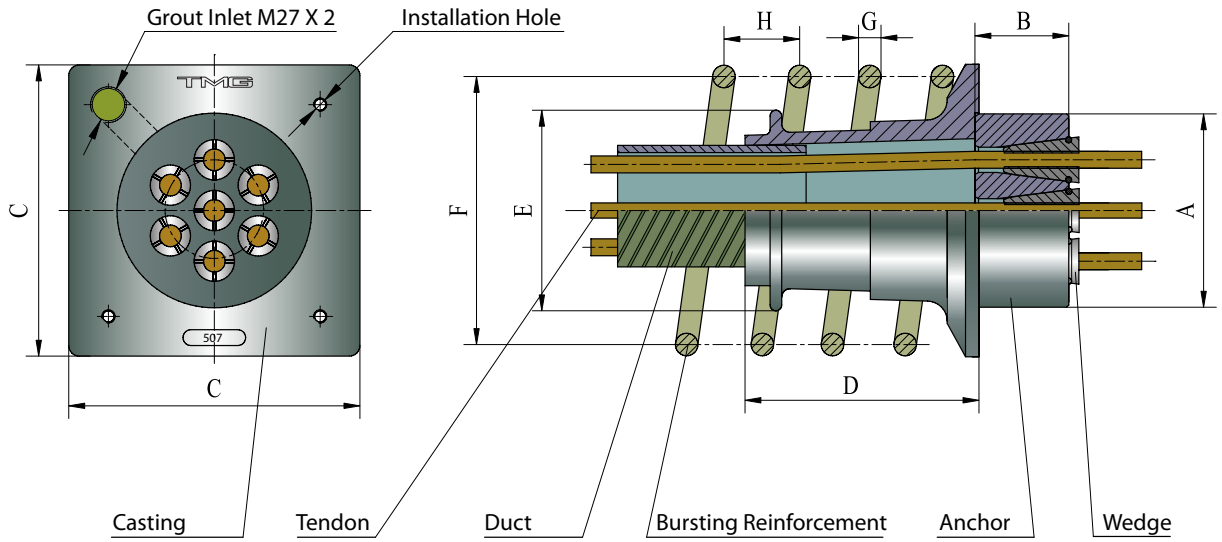
It is commonly found in (not limited to) warehouses & goods distribution centers, manufacturing plants, airport / seaport & rail container terminals, floor bases of water / sewage tanks, aircraft hangers, heavy vehicle workshops / parks, skating rings, basketball / tennis courts etc.

TMG Stress Anchors provides users with a safe and reliable system, it is also highly efficient, and thus providing users trouble-free stressing.

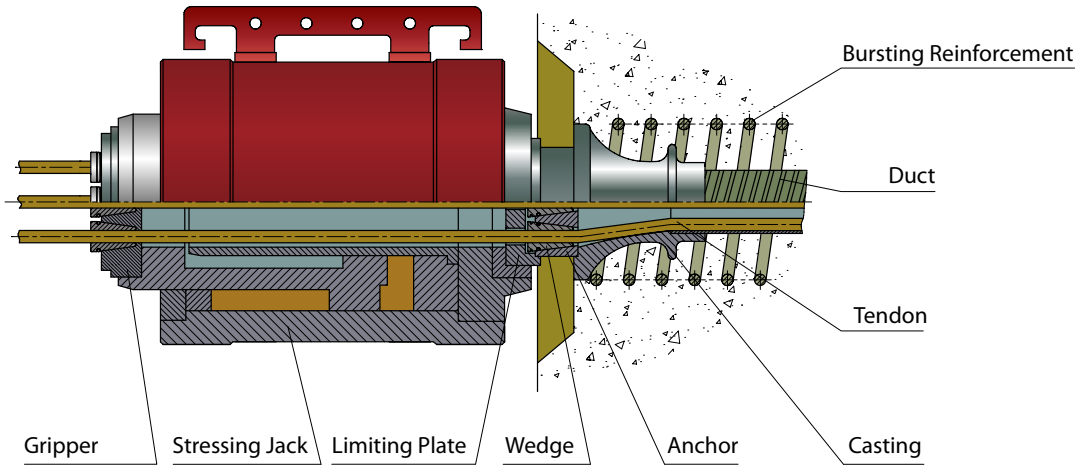
TMG Stress Anchors

Mono Anchors

31 Strands Anchor



TMG Stress Anchors Structural Diagram



TMG Stress Anchors and Stressing Jack Structural Diagram

Technical Data for TMG Stress Anchors with 12.70mm Strands

Unit : mm

Part Number	Number of Strands	Anchor		Casting				Bursting Reinforcement				Duct (round)	Stressing Jack Tonnage Requirement (Tons)
				5**C				5**BR				Metal / Plastic	
		A	B	C	D	Installation hole		F	G	H	Number of Turns	Inner Diameter	
						Spacing	Diameter						
501	1	Φ40	40	70	70	-	-	Φ80	Φ6	30	4	-	Mono Jack
502	2	Φ75	45	115	90	85	M10	Φ120	Φ8	40	4	45	100
503	3	Φ80	45	125	100	90	M10	Φ120	Φ8	40	4	50	
504	4	Φ85	46	135	110	90	M10	Φ120	Φ8	40	4	50	
505	5	Φ98	46	145	120	100	M10	Φ140	Φ10	50	4	55	
506	6	Φ112	48	165	130	110	M10	Φ150	Φ10	50	4	55	
507	7	Φ112	48	165	130	110	M10	Φ150	Φ10	50	4	55	
508	8	Φ116	50	175	140	120	M10	Φ170	Φ12	50	4	70	150
509	9	Φ132	50	185	150	135	M10	Φ170	Φ12	50	4	70	
510	10	Φ136	52	195	160	150	M10	Φ190	Φ14	50	4	80	
511	11	Φ146	52	205	160	160	M10	Φ210	Φ14	50	4	80	200
512	12	Φ146	52	215	180	160	M10	Φ210	Φ14	50	4	80	
513	13	Φ146	52	230	180	160	M10	Φ210	Φ14	50	4	80	
514	14	Φ156	55	230	180	170	M10	Φ210	Φ14	50	4	90	
515	15	Φ166	60	240	190	170	M10	Φ225	Φ14	60	5	90	250
516	16	Φ176	62	240	200	185	M10	Φ225	Φ14	60	5	90	
517	17	Φ176	62	250	200	185	M10	Φ225	Φ14	60	5	90	
518	18	Φ176	63	270	220	185	M10	Φ225	Φ14	60	5	90	300
519	19	Φ176	63	270	220	185	M10	Φ225	Φ14	60	5	90	
520,521,522	20,21,22	Φ196	65	290	250	210	M10	Φ260	Φ16	60	5	100	400
523,524	23,24	Φ216	72	300	270	210	M10	Φ280	Φ16	60	5	110	
525	25	Φ216	75	300	270	220	M10	Φ290	Φ16	60	5	110	
526	26	Φ216	75	305	270	220	M10	Φ290	Φ16	60	5	110	
527	27	Φ216	75	310	270	220	M10	Φ290	Φ16	60	5	110	
528,529	28,29	Φ226	78	320	290	230	M10	Φ290	Φ18	70	6	120	500
530,531	30,31	Φ226	80	320	290	230	M10	Φ290	Φ18	70	6	120	
532,533,534	32,33,34	Φ246	83	340	300	250	M10	Φ320	Φ20	70	6	120	
535,536,537	35,36,37	Φ246	85	360	320	260	M10	Φ320	Φ20	70	6	130	600

** is the number of Strands

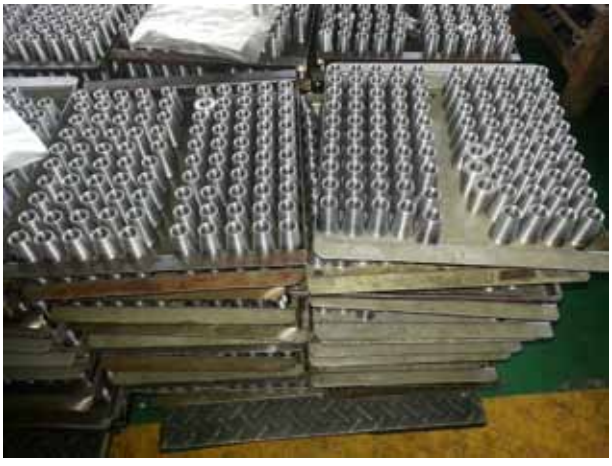
Scenes of Production

Technical Data for TMG Stress Anchors with 15.24mm Strands

Unit : mm

Part Number	Number of Strands	Anchor		Casting				Bursting Reinforcement				Duct (round)	Stressing Jack Tonnage Requirement (Tons)
				6**C				6**BR				Metal / Plastic	
		A	B	C	D	Installation hole		F	G	H	Number of Turns	Inner Diameter	
						Spacing	Diameter						
601	1	Φ48	45	80	80	-	-	Φ80	Φ6	30	4	-	Mono Jack
602	2	Φ86	45	115	80	85	M10	Φ120	Φ8	40	4	45	100
603	3	Φ88	45	130	100	90	M10	Φ120	Φ10	40	4	50	
604	4	Φ102	48	145	110	100	M10	Φ140	Φ10	50	4	55	
605	5	Φ112	48	160	125	110	M10	Φ150	Φ10	50	4	55	
606	6	Φ126	50	180	155	120	M10	Φ170	Φ12	50	4	70	150
607	7	Φ126	50	180	155	125	M10	Φ170	Φ12	50	4	70	
608	8	Φ136	52	195	175	135	M10	Φ190	Φ12	50	4	80	200
609	9	Φ146	52	205	190	150	M10	Φ200	Φ12	50	4	80	
610	10	Φ156	55	215	210	160	M10	Φ210	Φ14	50	4	90	250
611	11	Φ166	56	225	210	170	M10	Φ210	Φ14	50	4	90	
612	12	Φ166	58	235	210	170	M10	Φ225	Φ14	60	4	90	
613	13	Φ166	58	245	210	170	M10	Φ225	Φ14	60	4	90	300
614	14	Φ176	60	255	210	185	M10	Φ240	Φ14	60	5	100	
615	15	Φ186	62	265	245	190	M10	Φ260	Φ14	60	5	100	
616	16	Φ196	65	275	270	200	M10	Φ260	Φ16	60	5	110	400
617	17	Φ196	65	285	270	200	M10	Φ280	Φ16	60	5	110	
618	18	Φ206	70	300	275	210	M10	Φ280	Φ16	60	5	110	
619	19	Φ206	70	300	275	210	M10	Φ280	Φ16	60	5	110	
620,621,622	20,21,22	Φ226	75	320	285	220	M10	Φ290	Φ16	60	5	120	500
623,624,625	23,24,25	Φ246	78	340	300	230	M10	Φ290	Φ18	70	5	120	
626,627	26,27	Φ246	80	340	300	230	M10	Φ290	Φ18	70	5	120	650
628	28	Φ256	82	370	330	250	M10	Φ320	Φ18	70	6	130	
629,630,631	29,30,31	Φ256	85	370	330	250	M10	Φ320	Φ18	70	6	130	
632,633,634	32,33,34	Φ286	88	390	350	280	M10	Φ350	Φ20	70	6	140	800
635,636,637	35,36,37	Φ286	90	390	350	280	M10	Φ350	Φ20	70	6	140	

** is the number of Strands



Scenes of Production

Strands Installation

Stranding

Installation of Anchors

Installation of Anchors

Installation of Anchors

Installation of Anchors

Installation of Anchors

Stressing

Common Problems with Ground without Post-Tensioning

Abrasion

Cracks

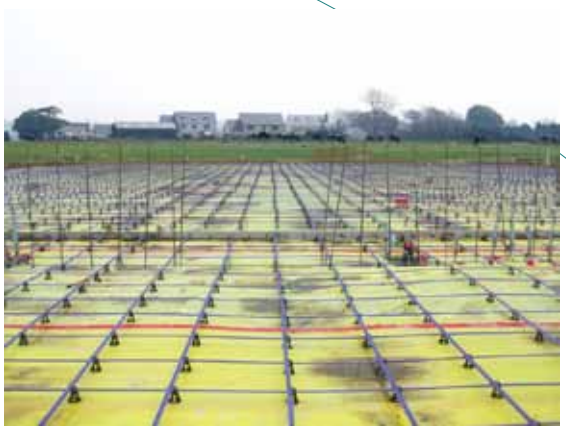
Shrinkage

Reference Photos for TMG Slab On Grade

Prefabricated Unbonded Strands for Slab On Grade Application

Slab on Grade

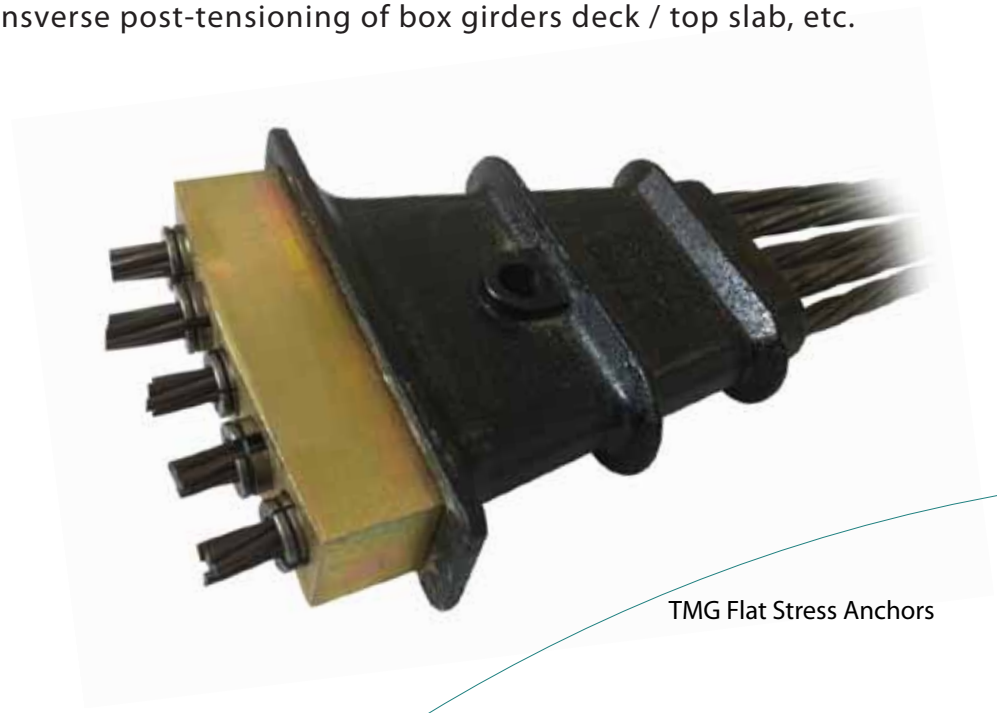
Slab on Grade



Slab on Grade

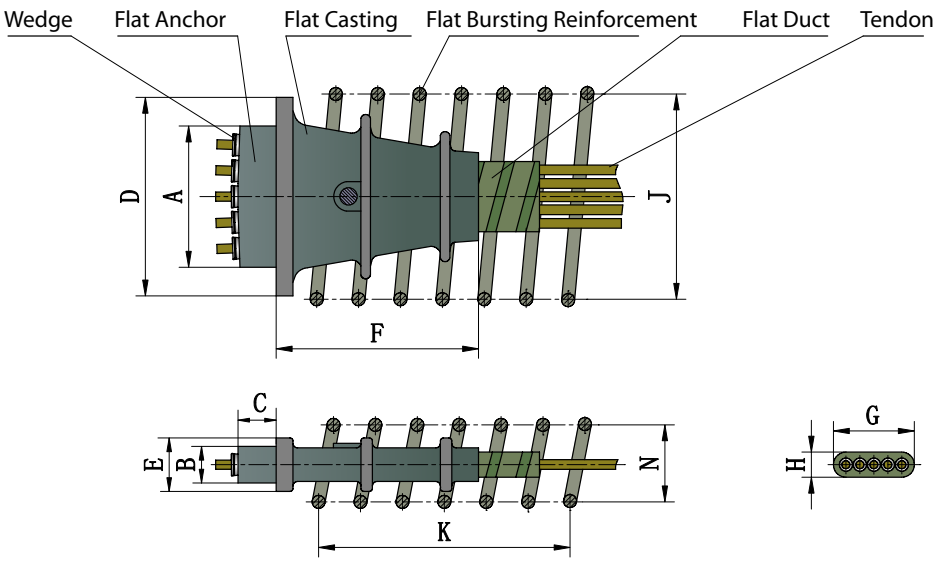
TMG Flat Stress Anchors

Flat Stress Anchors is generally used for building flat slab, side walls of hollow core beams / girders, transverse post-tensioning of box girders deck / top slab, etc.



TMG Flat Stress Anchors

Technical Drawing of TMG Flat Stress Anchors



TMG Flat Stress Anchors Structural Diagram

Technical Data for TMG Flat Stress Anchors with 12.70mm Strands

Unit : mm

Part Number			502F	503F	504F	505F
Number of Strands			2	3	4	5
Flat Anchor		A	80	110	145	179
		B	48	48	48	48
		C	50	50	50	50
Flat Casting	5**CF	D	115	152	186	220
		E	66	66	66	66
		F	130	160	180	200
Flat Bursting Reinforcement	5**BRF	J	165	200	235	270
		K	250	250	250	250
		N	155	155	155	155
		Number of Turns	6	6	6	6
Duct (Flat)	Inner Dimension	G	50	60	70	90
		H	19	19	19	19

** is the number of Strands

Technical Data for TMG Flat Stress Anchors with 15.24mm Strands

Unit : mm

Part Number			602F	603F	604F	605F
Number of Strands			2	3	4	5
Flat Anchor		A	82	115	150	185
		B	48	48	48	48
		C	50	50	50	50
Flat Casting	6**CF	D	125	156	190	226
		E	70	70	70	70
		F	140	160	200	220
Flat Bursting Reinforcement	6**BRF	J	180	210	240	270
		K	250	250	250	250
		N	120	120	120	120
		Number of Turns	6	6	6	6
Duct (Flat)	Inner Dimension	G	50	60	70	90
		H	19	19	19	19

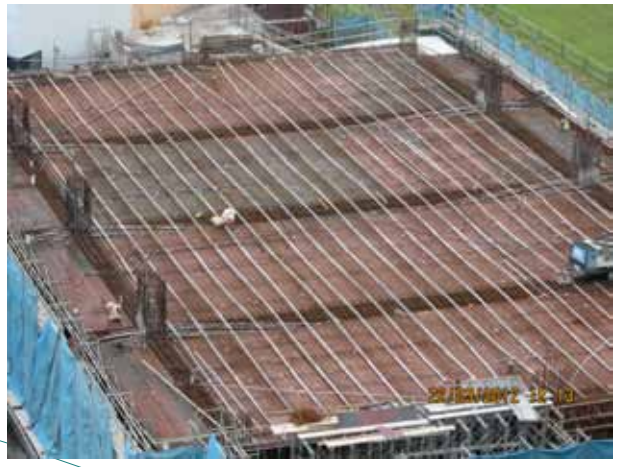
** is the number of Strands

Scenes of Production (Anchor Head Drilling)

Scenes of Production

Installation of Flat Anchors

Deck Slab



Deck Slab

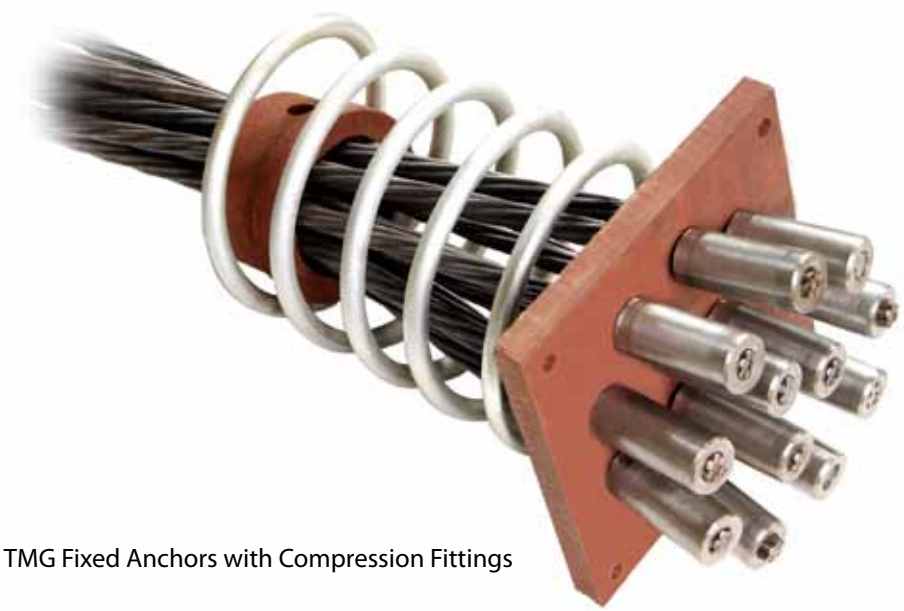
Deck Slab

Stressing of Flat Anchors

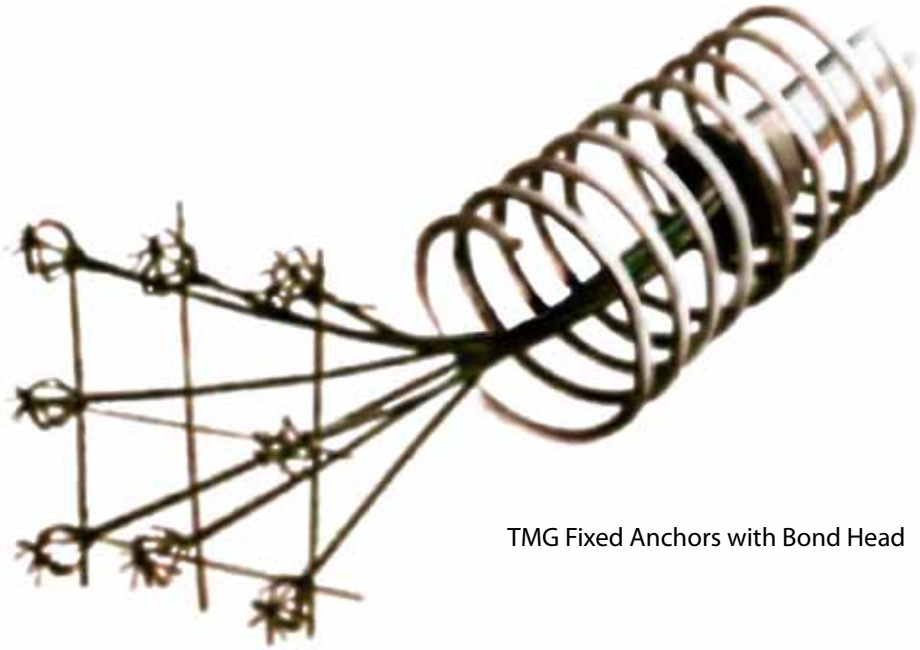
TMG Fixed Anchors

Fixed Anchors are also commonly known as Dead Anchors, where no stressing is done. This type of anchors can be done with Compression Fittings or the strands is deliberately shaped to form a Bond Head (also commonly known as pear / onion shape head) to bond with the concrete structure. Prestressing force is still been transferred from the live end to the dead end after stressing.

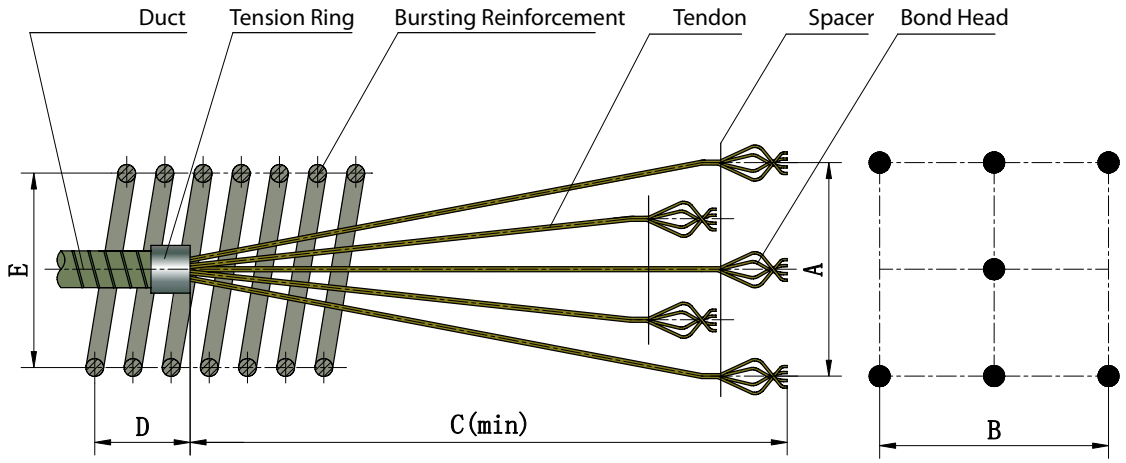
This kind of anchorage system provides the best solution when strands has to be push through on site. Its generic dimension and layout of tendons is similar to Stress Anchors.



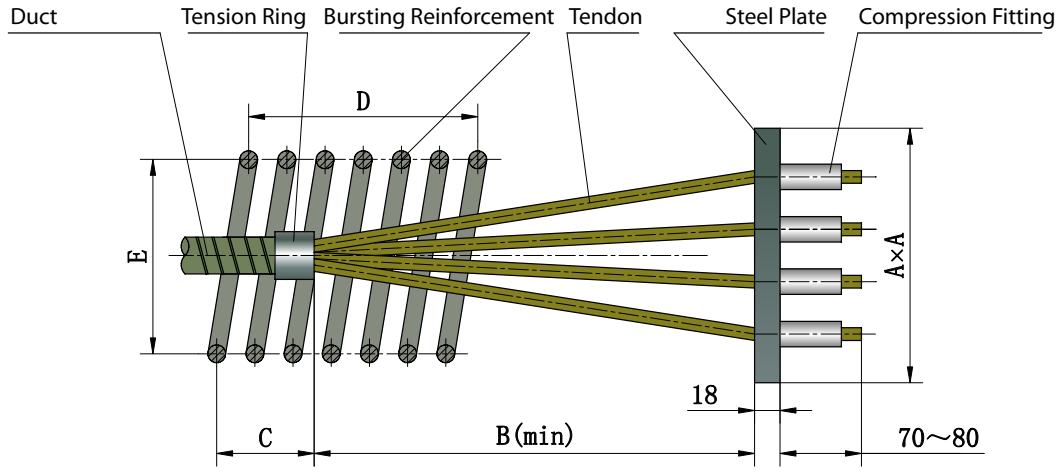
TMG Fixed Anchors with Compression Fittings



TMG Fixed Anchors with Bond Head



TMG Fixed Anchors (with Bond Head) Structural Diagram

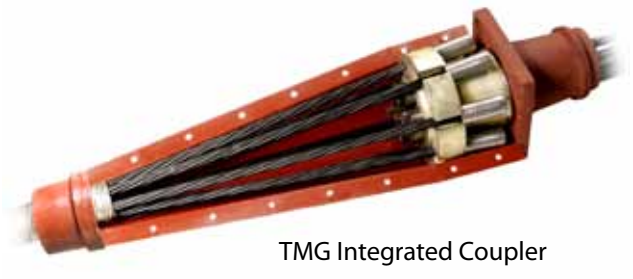


TMG Fixed Anchors (with Compression Fittings) Structural Diagram

TMG Coupler

Coupler is an essential part of post-tensioning where a continuous tendon is laid over a few spans of girders in bridge construction. Due to the frictional loses that occurs during stressing, Couplers are used to provide optimum prestressing efficiency. TMG offers a few types of Couplers for different usage.

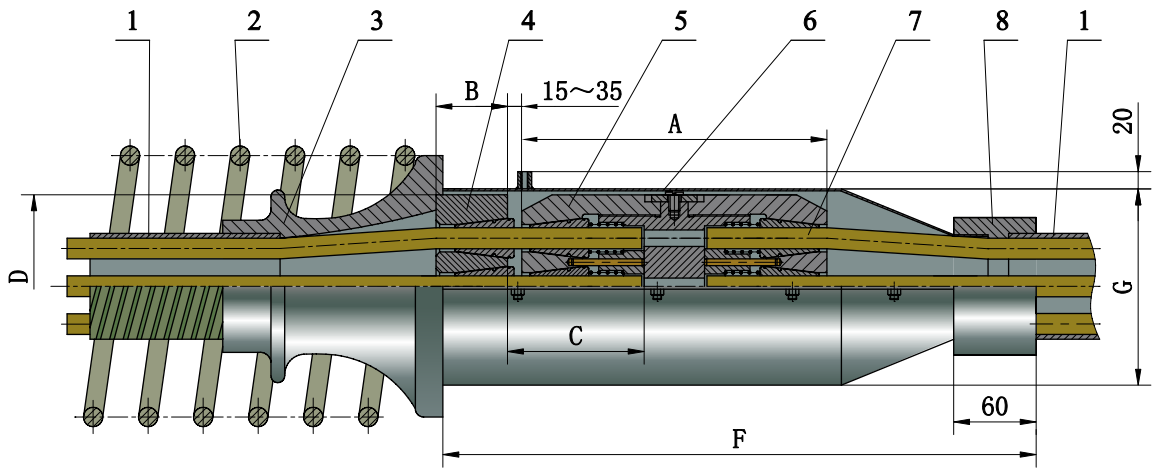
TMG Compact Coupler



TMG Integrated Coupler

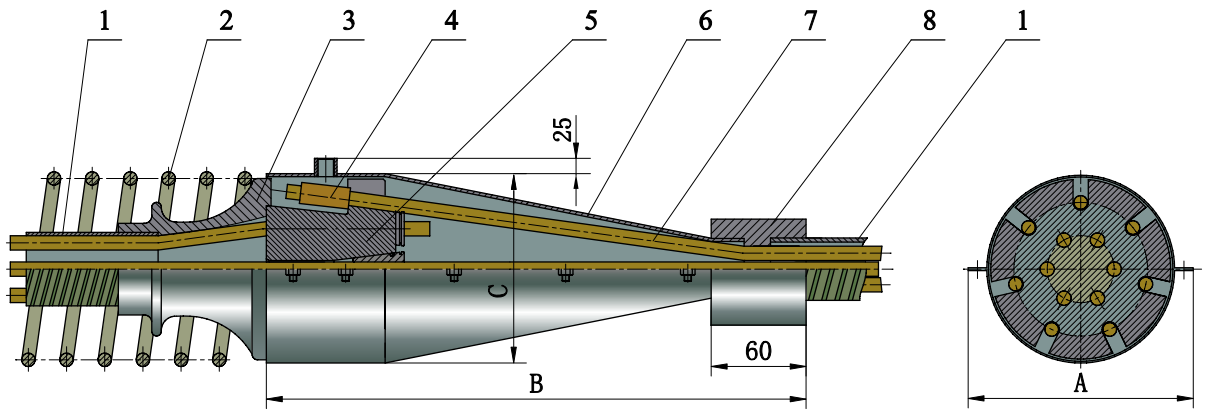
TMG Flat Coupler

Technical Drawing for TMG Coupler



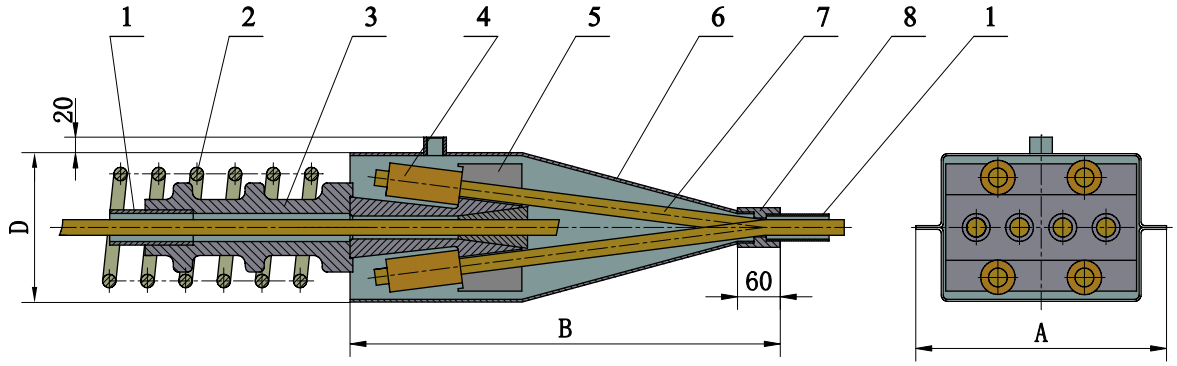
1. Duct
2. Bursting Reinforcement
3. Casting
4. Anchor
5. Compact Coupler
6. Protection Cover
7. Tendon
8. Tension Ring

TMG Compact Coupler Structural Diagram



1. Duct
2. Bursting Reinforcement
3. Casting
4. Compression Fittings
5. Integrated Coupler
6. Protection Cover
7. Tendon
8. Tension Ring

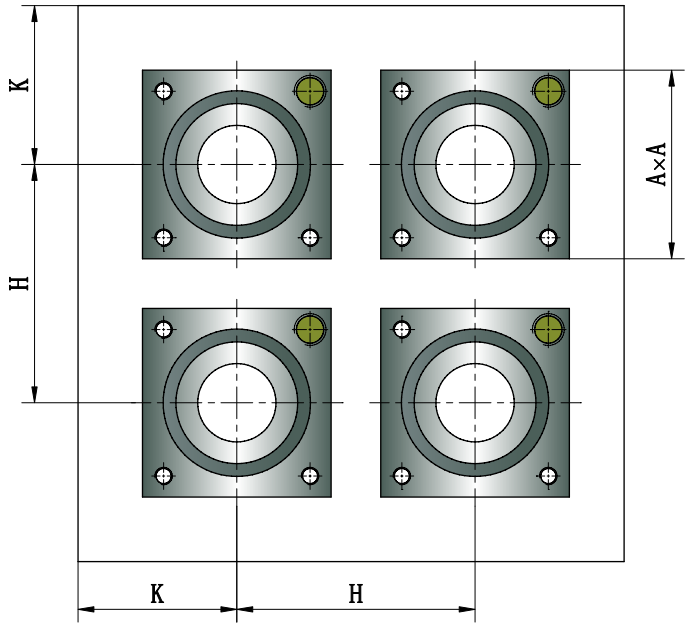
TMG Integrated Coupler Structural Diagram

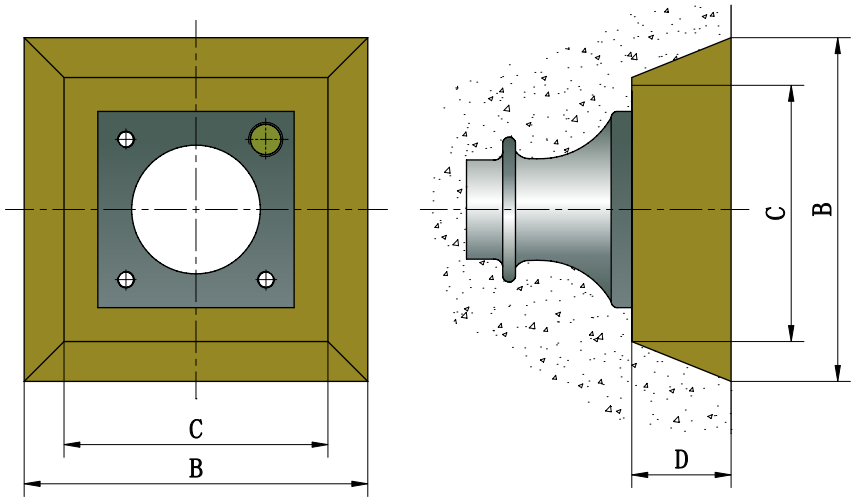


1. Flat Duct
2. Flat Bursting Reinforcement
3. Flat Casting
4. Compression Fittings
5. Flat Coupler
6. Protection Cover
7. Tendon
8. Tension Ring

TMG Flat Coupler Structural Diagram

TMG Casting Block-Out (Round)





Block-Out Dimensions & Clearance Requirements for Casting with 12.70mm Strands

Unit : mm

Part Number	Number of Strands	Casting	Block-Out Dimensions			Concrete Grade					
						C40		C50		C60	
		A	B	C	D	H	K	H	K	H	K
502	2	115	365	235	110	149	97	138	92	126	86
503	3	125	380	245	120	169	110	156	104	143	97
504	4	135	380	255	120	169	110	156	104	143	97
505	5	145	380	265	120	182	119	168	112	154	105
506	6	165	380	285	120	195	127	180	120	165	112
507	7	165	380	285	120	195	127	180	120	165	112
508	8	175	450	295	130	214	140	198	132	181	123
509	9	185	450	305	130	240	157	222	148	203	138
510	10	195	450	315	130	260	170	240	160	220	150
511	11	205	450	325	130	273	178	252	168	231	157
512	12	215	450	335	130	273	178	252	168	231	157
513	13	230	450	350	130	273	178	252	168	231	157
514	14	230	500	350	140	286	187	264	176	242	165
515	15	240	500	360	140	312	204	288	192	264	180
516	16	240	540	360	140	344	225	318	212	291	198
517	17	250	540	370	140	344	225	318	212	291	198
518	18	270	540	390	140	344	225	318	212	291	198
519	19	270	540	390	140	344	225	318	212	291	198
520	20	290	540	410	140	364	238	336	224	308	210
521	21	290	540	410	140	364	238	336	224	308	210
522	22	290	540	410	140	364	238	336	224	308	210
523	23	300	600	420	150	377	246	348	232	319	217
524	24	300	600	420	150	377	246	348	232	319	217
525	25	300	600	420	150	390	255	360	240	330	225
526	26	305	600	425	150	390	255	360	240	330	225
527	27	310	600	430	150	390	255	360	240	330	225

Scenes of Production

Scenes of Production (Casting)

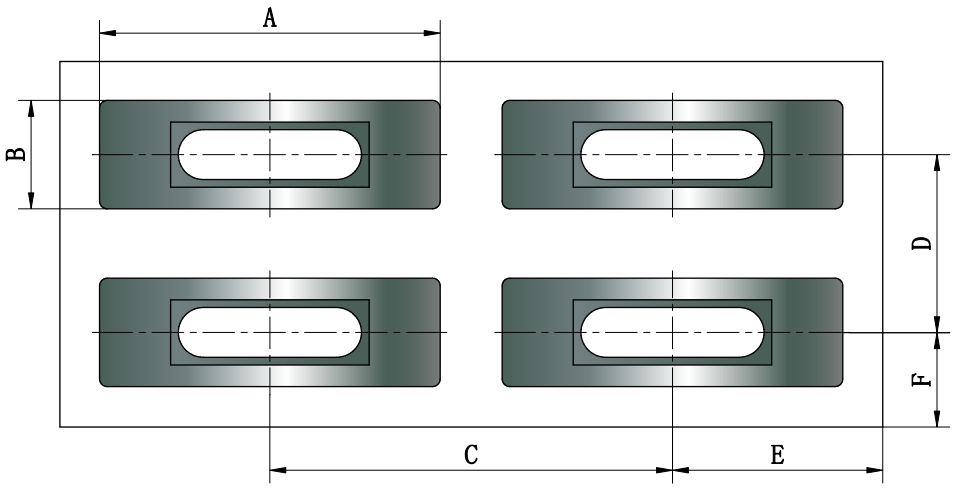
Block-Out Dimensions & Clearance Requirements for Casting with 15.24mm Strands

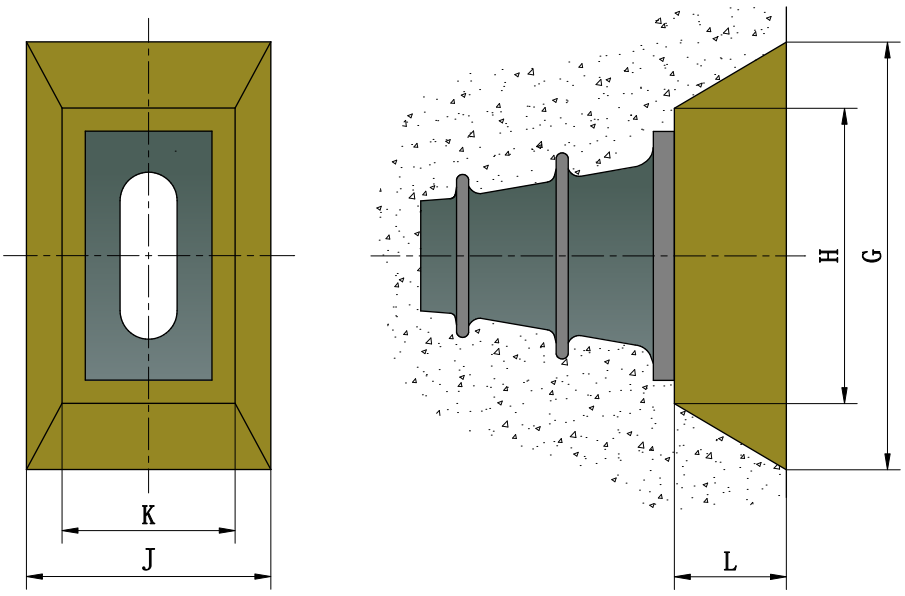
Unit : mm

Part Number	Number of Strands	Casting	Block-Out Dimensions			Concrete Grade					
						C40		C50		C60	
		A	B	C	D	H	K	H	K	H	K
602	2	115	380	255	120	149	97	138	92	126	86
603	3	130	380	270	120	169	110	156	104	143	97
604	4	145	380	285	120	182	119	168	112	154	105
605	5	160	380	300	120	195	127	180	120	165	112
606	6	180	450	320	130	214	140	198	132	181	123
607	7	180	450	320	130	227	148	210	140	192	131
608	8	195	540	335	130	240	157	222	148	203	138
609	9	205	540	345	130	260	170	240	160	220	150
610	10	215	540	355	140	273	178	252	168	231	157
611	11	225	540	365	140	286	187	264	176	242	165
612	12	235	540	375	140	299	195	276	184	253	172
613	13	245	540	395	140	312	204	288	192	264	180
614	14	255	580	405	140	325	212	300	200	275	187
615	15	265	580	415	140	338	221	312	208	286	195
616	16	275	600	425	150	344	225	318	212	291	198
617	17	285	600	435	150	351	229	324	216	297	202
618	18	300	600	450	150	364	238	336	224	308	210
619	19	300	600	450	150	377	246	348	232	319	217
620	20	320	600	470	150	390	255	360	240	330	225
621	21	320	600	470	150	390	259	366	244	335	228
622	22	320	600	470	150	403	263	372	248	341	232
623	23	340	680	500	190	409	267	378	252	346	236
624	24	340	680	500	190	413	270	381	254	349	238
625	25	340	680	500	190	416	272	384	256	352	240
626	26	340	680	500	190	422	276	390	260	357	243
627	27	340	680	500	190	429	280	396	264	363	247

Scenes of Testing Lab

TMG Flat Casting Block-Out





Block-Out Dimensions & Clearance Requirements for Flat Casting with 12.70mm Strands

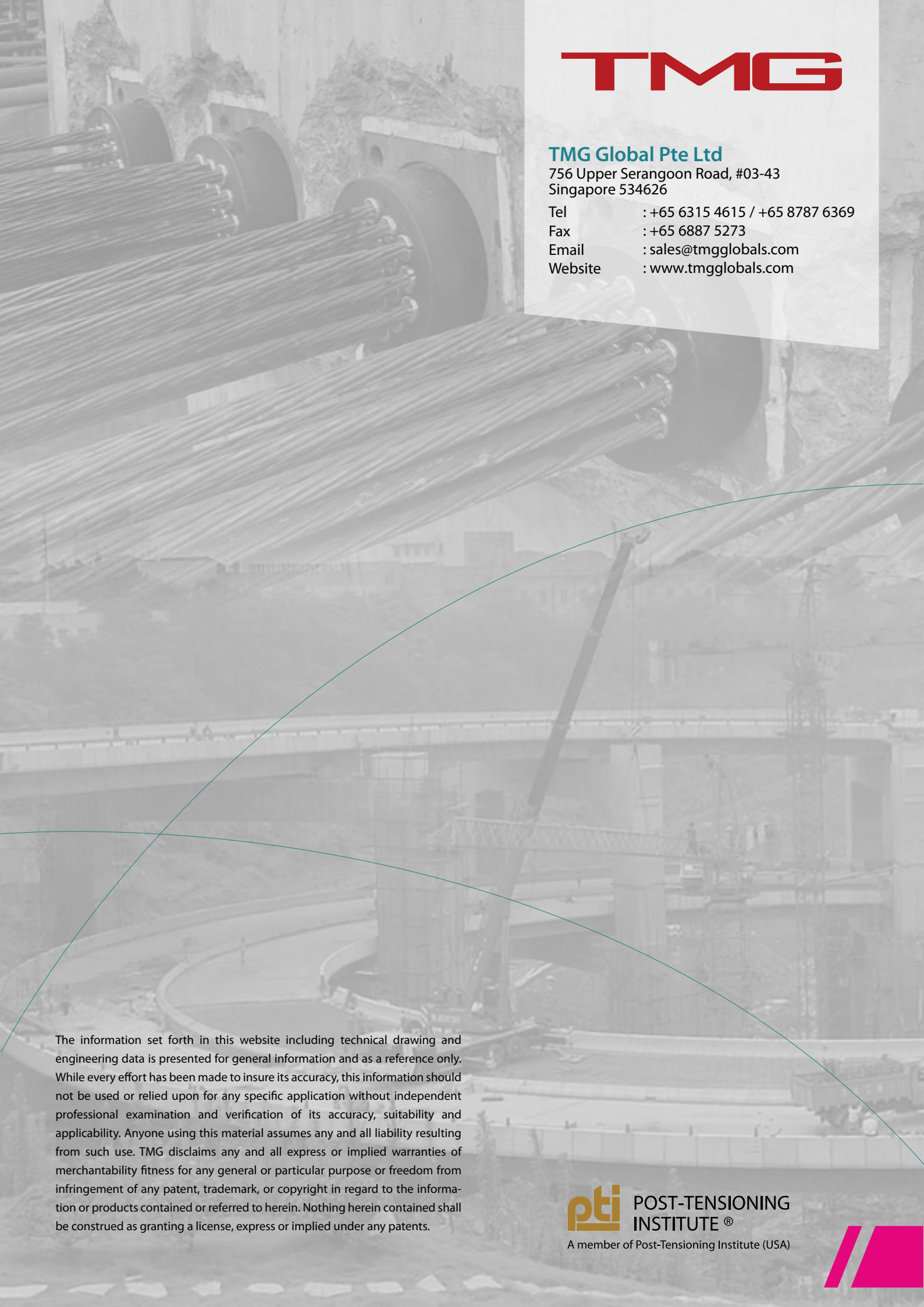
Unit : mm

Part Number			502F	503F	504F	505F
Number of Strands			2	3	4	5
Flat Casting		A	115	152	186	220
		B	66	66	66	66
Concrete Grade	C40	C	145	185	220	255
		D	80	80	85	85
		E	90	105	130	145
		F	50	50	55	55
	C50	C	140	180	215	250
		D	75	75	80	80
		E	90	105	130	145
		F	50	50	55	55
Block-Out Dimensions		G	300	340	390	440
		H	200	240	280	320
		J	230	230	250	260
		K	130	130	140	140
		L	100	100	110	120

Block-Out Dimensions & Clearance Requirements for Flat Casting with 15.24mm Strands

Unit : mm

Part Number			602F	603F	604F	605F
Number of Strands			2	3	4	5
Flat Casting		A	125	156	190	226
		B	70	70	70	70
Concrete Grade	C40	C	160	190	230	265
		D	90	90	95	95
		E	95	115	135	160
		F	55	60	70	75
	C50	C	155	185	225	260
		D	85	85	90	90
		E	95	115	135	160
		F	55	60	70	75
Block-Out Dimensions		G	300	340	390	440
		H	200	240	280	320
		J	230	230	250	260
		K	130	130	140	140
		L	100	100	110	120



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