

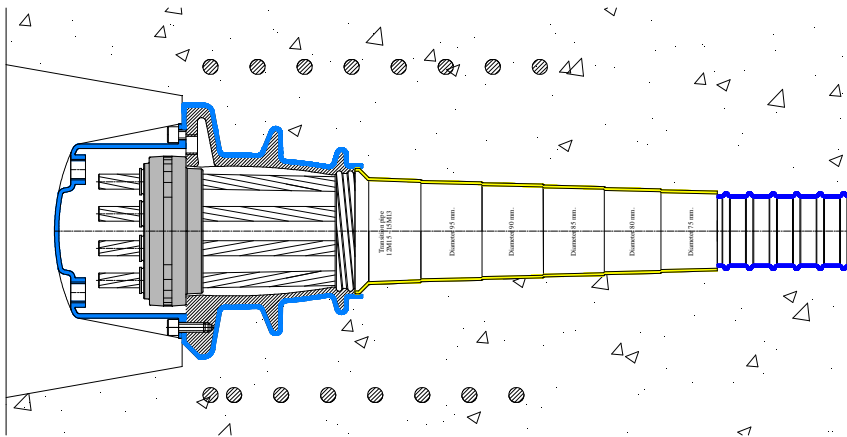


**"MX<sup>®</sup>" SERIES ACTIVE ANCHORAGES**



The "MX<sup>®</sup>" system is designed to comply with the guidelines **ETAG013**. This anchorage is made of: an anchorage awarded with the European Technical Approval **ETA-09-0012** and the marking **CE 0969-CPD-001/09-PT** completely encapsulated in polyethylene.

Simulations made with finite element codes and laboratory tests allowed to design a compact anchorage to comply with the guidelines **ETAG 013**.



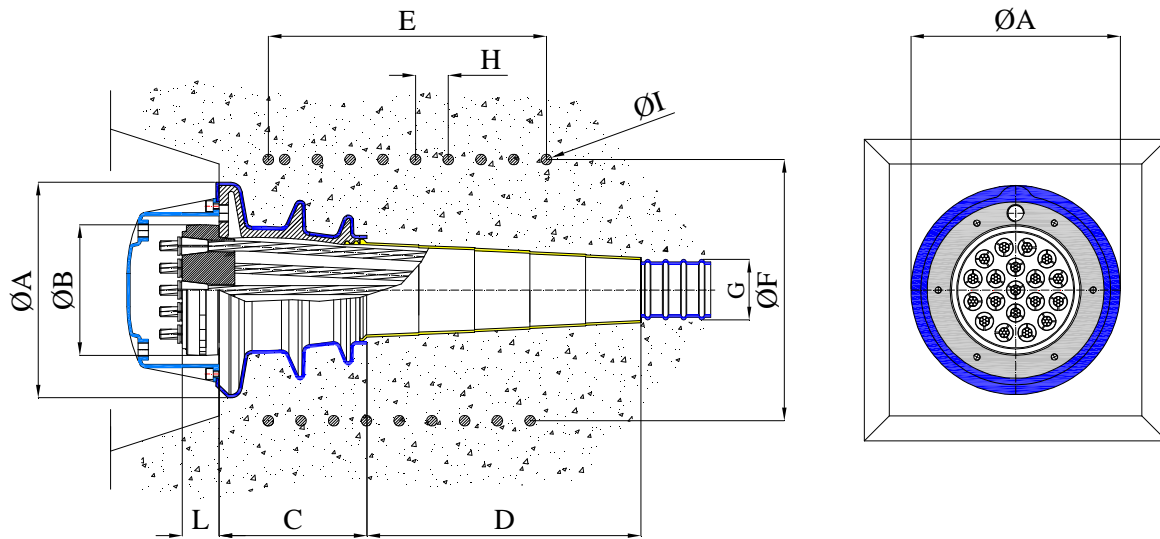
The "MX<sup>®</sup>" series active anchorage is made of the following parts: casting coated with polyethylene, anchor plate, wedges, polyethylene cap to contain grease and connection in H.D.P.E. to connect the casting to the metallic sheath, more usually in polyethylene. Castings have a turned plane for the plate, holes for connection to cap and formwork and a threaded grouting hole. Castings are in spheroidal cast iron EN-GJS 500-7 EN-JS-1050, which offers a high resistance to stress and is weldable. However, due to the polyethylene protection it is provided with, it cannot be welded without compromising the coating. This coating also requires a particular care during the installation.

Strands are blocked on a distribution plate with truncated cone holes in steel C40-45 UNI EN 10083/1 and by means of wedges in steel 16NiCr4Pb UNI EN 10277-4.

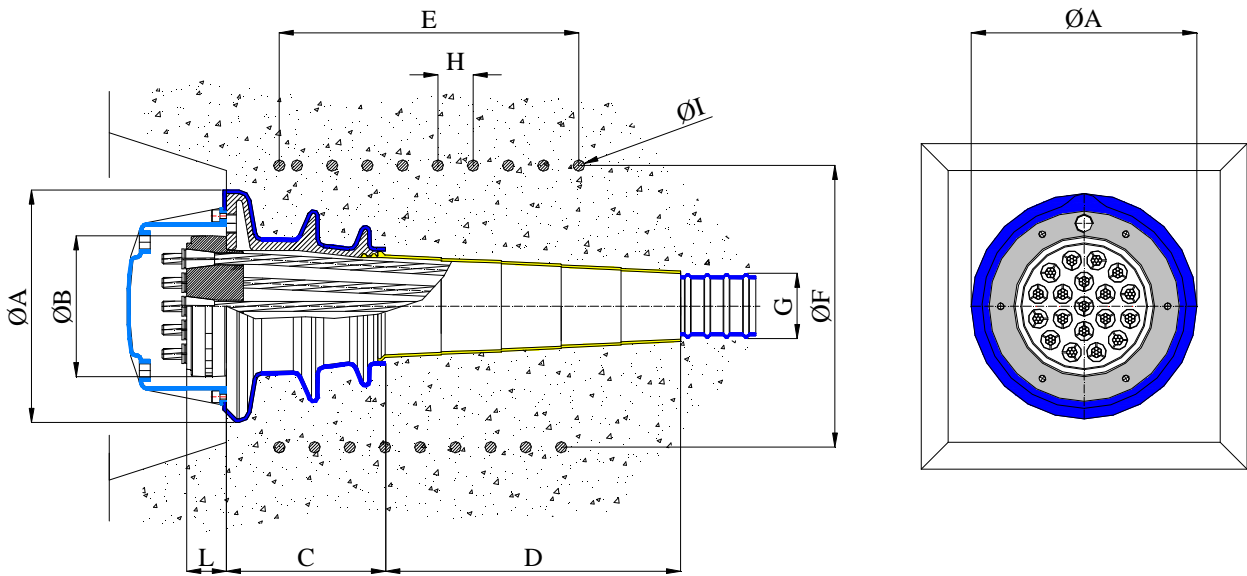
The anchorage and the sheaths are connected by means of a truncated cone connection that guarantees a correct deviation of strands, minimizing the values of losses. The connection is made of H.D.P.E. and suitable for the connection to several-diameter sheaths.

All castings have threaded holes on the plane to allow an easy fixing to the formwork by means of bolts.

All castings have a gas threaded hole for grouting to allow the connection to the several solutions available for grouting.



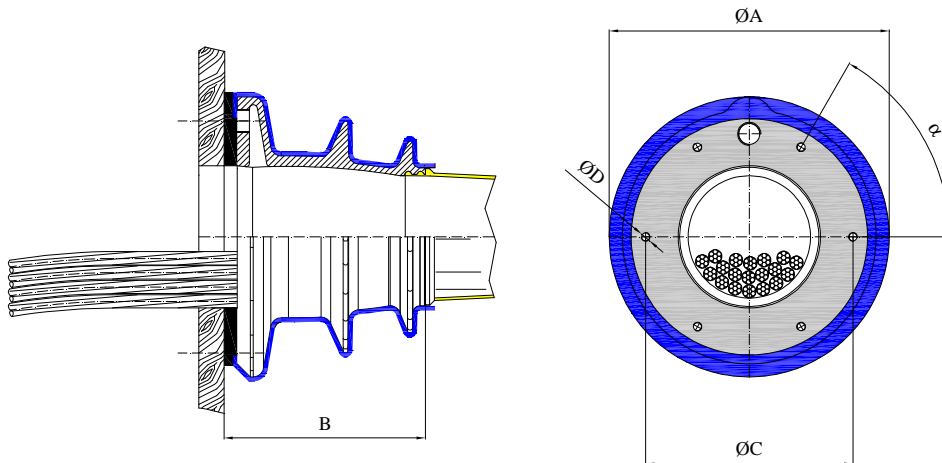
Type	Ultimate load for cable			A	B	C	D	E	F	G	H	I	L
	T15	T15S	T15C										
	259 kN	279 kN	307 kN	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
4MX15	1036	1116	1228	168	105	103	300	180	170	45/50	45	12	140
7MX15	1813	1953	2149	208	125	133	340	250	220	62/67	45	12	140
9MX15	2331	2511	2763	243	146	163	380	250	250	72/77	45	14	140
12MX15	3108	3348	3684	273	160	180	385	300	300	80/85	50	16	140
15MX15	3885	4185	4605	298	176	197	405	350	355	85/90	50	16	140
19MX15	4921	5301	5833	328	200	215	430	425	400	95/100	50	16	115
22MX15	5698	6138	6754	363	230	260	430	425	420	100/105	50	18	140
27MX15	6993	7533	8289	388	250	277	470	400	460	110/115	50	18	140



Type	Ultimate load for cable			A	B	C	D	E	F	G	H	I	L
	T15	T15S	T15C										
	259 kN	279 kN	307 kN										
4MX15	1036	1116	1228	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
7MX15	1813	1953	2149	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
9MX15	2331	2511	2763	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
12MX15	3108	3348	3684	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
15MX15	3885	4185	4605	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
19MX15	4921	5301	5833	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
22MX15	5698	6138	6754	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
27MX15	6993	7533	8289	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)

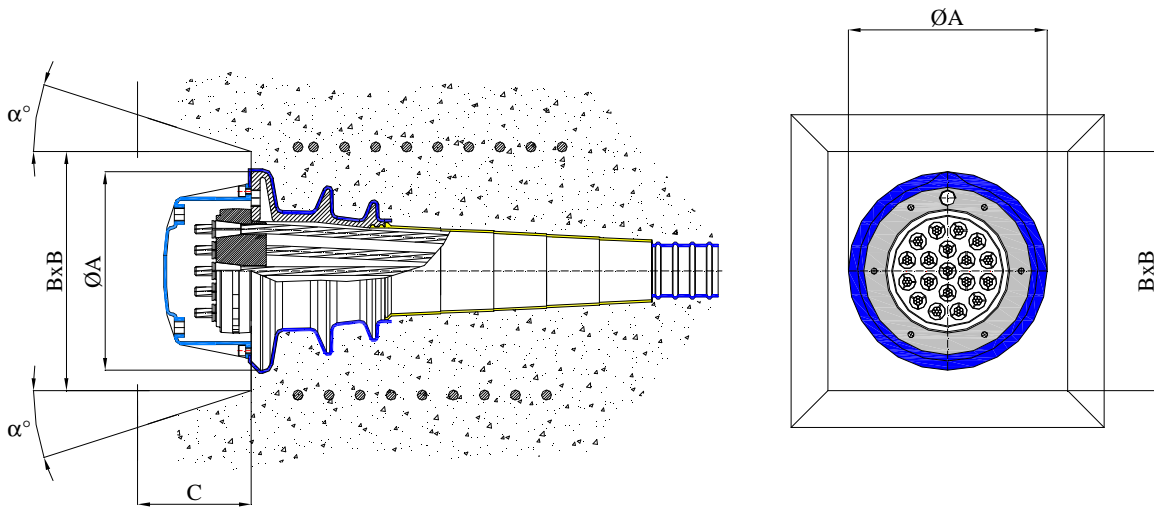
### CONNECTION TO THE FORMWORK

The hole for grouting connection must be installed on the upper part of the anchorage to guarantee a correct discharge of all the air inside the cable.



Type	4MX15	7MX15	9MX15	12M <sub>ep</sub> 15 12MX15	15M <sub>ep</sub> 15 15MX15	19M <sub>ep</sub> 15 19MX15	22M <sub>ep</sub> 15 22MX15	27M <sub>ep</sub> 15 27MX15
A	168	208	243	273	298	328	363	388
B	123	153	183	200	219	237	284	300
C	124	145	190	203	235	237	290	325
D	M6	M10	M10	M10	M12	M12	M16	M16
α	60°	60°	60°	60°	60°	60°	60°	60°
Quantity	6	6	6	6	6	6	6	6

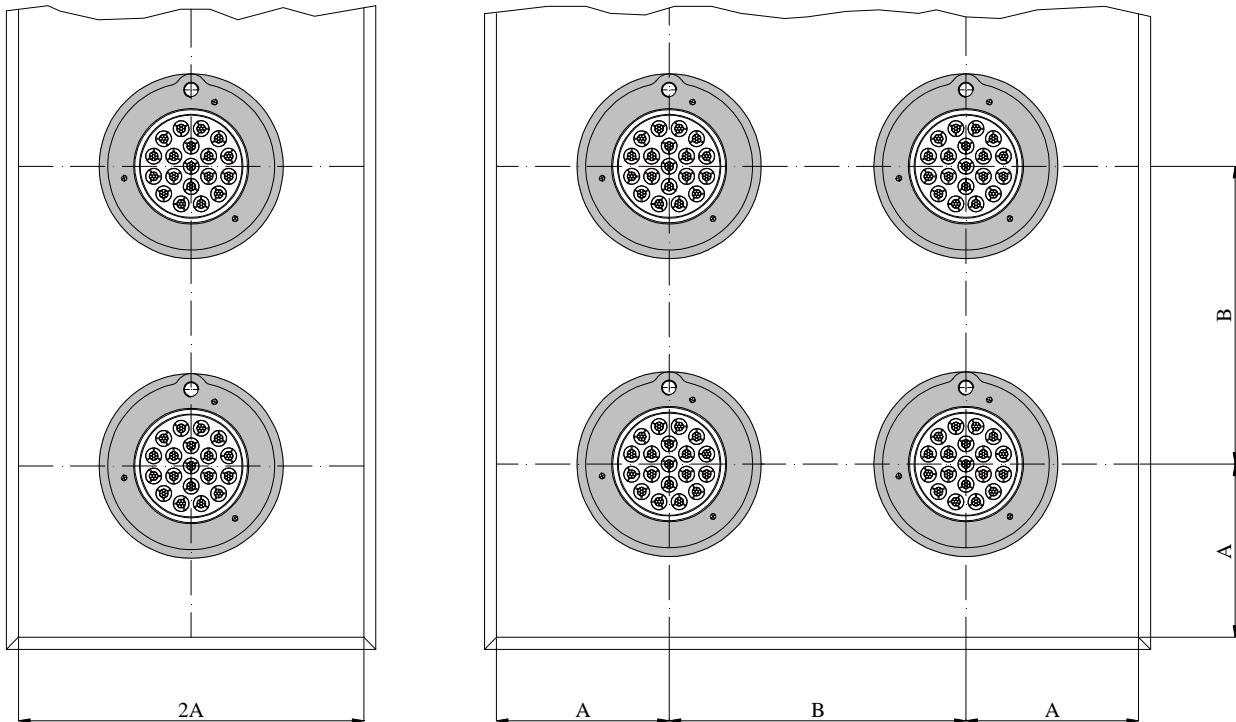
### RECESSES FOR MX<sup>®</sup> ANCHORAGES



Type	4MX15	7MX15	9MX15	12MX15	15MX15	19MX15	22MX15	27MX15
A	168	208	243	273	298	328	363	388
B x B	200x200	240x240	275x275	305x305	330x330	360x360	395x395	420x420
C	160	160	160	160	160	180	180	190
α	15	15	15	15	15	15	15	15

## DISTANCES FROM EDGES FOR M ANCHORAGES

The distances from edges and between anchorages are the same for the three types of anchorage **M<sub>EP</sub>**<sup>®</sup>, **M<sub>X</sub>**<sup>®</sup> and **M**



Minimum centres spacing B (mm)			Minimum edges distance A (mm)		
Type	$f_{cmj, cube}$		Type	$f_{cmj, cube}$	
	35 MPa	45 MPa		35 MPa	45 MPa
<b>4M15</b>	250	230	<b>4M15</b>	130	120
<b>7M15</b>	335	295	<b>7M15</b>	175	155
<b>9M15</b>	370	320	<b>9M15</b>	190	165
<b>12M15</b>	430	380	<b>12M15</b>	220	195
<b>15M15</b>	480	430	<b>15M15</b>	245	220
<b>19M15</b>	545	485	<b>19M15</b>	280	250
<b>22M15</b>	585	520	<b>22M15</b>	300	265
<b>27M15</b>	650	580	<b>27M15</b>	330	295