

# Rods & Casing

## Product Information Catalogue



  
**FORDIA**®  
Powered by Epiroc

# Drill Rods and Casing

Today's drilling industry has extremely high expectations for the people, equipment and the tools they use. When it comes to drill rods, it's very simple, they just need to perform, and nothing else is acceptable. When the failure of a rod could mean the loss of a drill hole and possibly the revenues that comes with it, there is no room for mistakes, lower quality or sub-standard products.

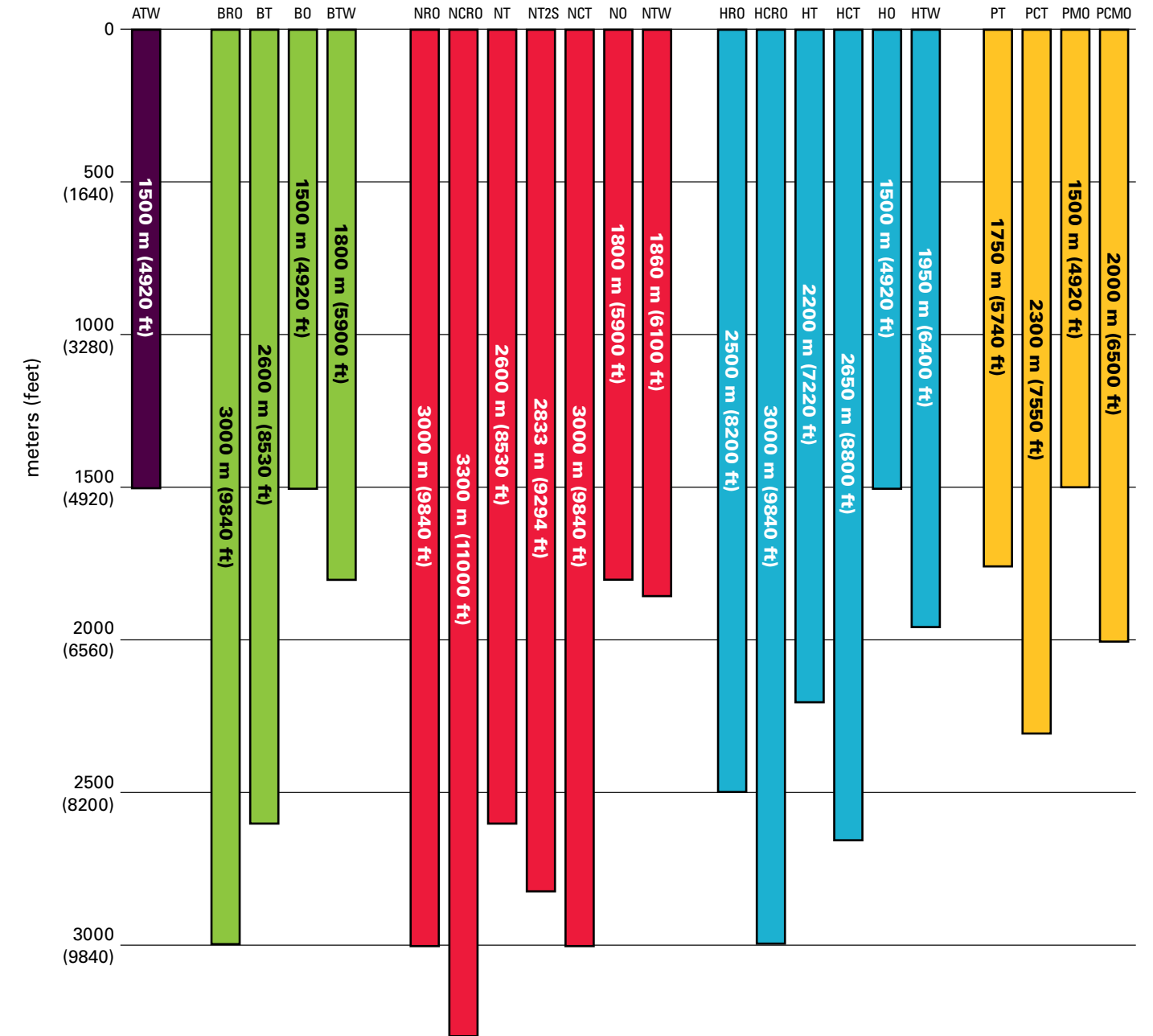
Fordia Powered by Epiroc has listened to the industry and we understand what our customers' needs are. This is why we make no compromise on our rods. We only use very high quality steel from world class suppliers and manufacture our drill rods to the highest possible standards. All this to ensure quality, reliability and performance. We worry about our wireline rods so our customers don't have to.

- All rods longer than 5 ft/1.5 m are heat treated for better wear resistance in all drilling applications.
- All rods longer than 5ft/1.5m (except RO thread Rods) that we manufacture are phosphate treated. Phosphating provides more protection to the threads on drill rods. It improves friction properties for parts that slide or thread together and it protects steel against corrosion.
- Manufactured to strict quality standards. We control and verify every rod thread and adapter we make.
- Complies with ISO 9001:2015 certification standards.



# Drill Rod Depth Capacity Chart

Depth capacities for vertical and straight holes filled with water



## Drill rod recommended usage



Do not mix drill rods from different manufacturers. This may lead to failure or loss of drill string down the hole.

The use of high quality drill rod thread compound is essential to drill rod thread performance and to maintain your warranty. Failure to use it will cause premature wear and galling. For best results we recommend the use of thread compound containing metal particulate, ideally zinc, copper or graphite compositions. The use of NTW, HTW rods is not recommended with top-drive drills.

# Drill Rod Dimensions

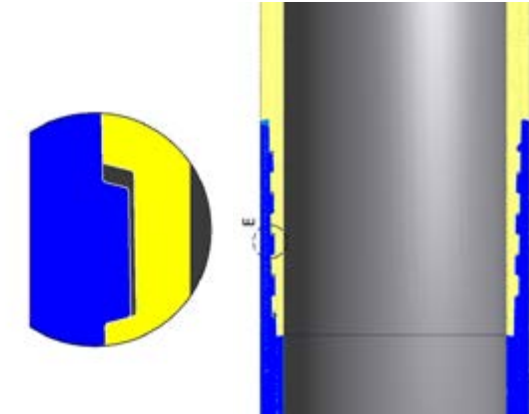
# O Drill Rods | T Drill Rods

O Rod Metric	Length m	Part No.	T Rod Metric	Length m	Part No.	R Rod Metric	Length m	Part No.	T2S Rod Metric	Length m	Part No.	TW Rod Metric	Length m	Part No.	MO Rod Metric	Length m	Part No.	Tube Walls
												ATW	0,6 m	3760007873				Parallel
												ATW	1,5 m	3760006094				Parallel
												ATW	3,0 m	3760006095				Parallel
BO	0,6 m	3760003436	BT	0,6 m	3760001223	BRO	0,6 m	3760014014				BTW	0,6 m	3760005631				Parallel
BO	1,5 m	3760001250	BT	1,5 m	3760001224	BRO	1,5 m	3760014015				BTW	1,5 m	3760005632				Parallel
BO	3,0 m	3760001251	BT	3,0 m	3760001225	BRO	3,0 m	3760014016				BTW	3,0 m	3760005633				Parallel
NO	0,6 m	3760003440	NT	0,6 m	3760001229	NRO	0,6 m	3760014020										Parallel
NO	1,5 m	3760001254	NT	1,5 m	3760001230	NRO	1,5 m	3760014021	NT2S	1,5 m	3760014187	NTW	1,5 m	9469705787				Parallel
NO	3,0 m	3760001255	NT	3,0 m	3760001231	NRO	3,0 m	3760014022	NT2S	3,0 m	3760014188	NTW	3,0 m	9469705788				Parallel
			NCT	3,0 m	3760005313	NCRO	3,0 m	3760014030										Internally Upset
HO	0,6 m	3760003438	HT	0,6 m	3760001235	HRO	0,6 m	3760014026				HTW	1,5 m	9469705765				Parallel
HO	1,5 m	3760001258	HT	1,5 m	3760001236	HRO	1,5 m	3760014027				HTW	3,0 m	9469705766				Parallel
HO	3,0 m	3760001259	HT	3,0 m	3760001237	HRO	3,0 m	3760014028										Parallel
			HCT	3,0 m	3760015208	HCRO	3,0 m	3760014050										Internally Upset
			PT	0,6 m	3760001238									PMO (HWT)	0,6 m	3760015249		Parallel
			PT	1,5 m	3760001239									PMO (HWT)	1,5 m	3760015244		Parallel
			PT	3,0 m	3760001240									PMO (HWT)	3,0 m	3760015245		Parallel
Imp.	ft	Part No.	Imp.	ft	Part No.	Imp.	ft	Part No.	Imp.	ft	Part No.	Imp.	ft	Part No.	Imp.	ft	Part No.	Tube Walls
BO	2 ft	On request	BT	2 ft	3760016415	BRO	2 ft	3760014011										Parallel
BO	5 ft	3760001248	BT	5 ft	On request	BRO	5 ft	3760014012										Parallel
BO	10 ft	3760001249	BT	10 ft	On request	BRO	10 ft	3760014013										Parallel
NO	2 ft	3760003441	NT	2 ft	3760001226	NRO	2 ft	3760014017				NTW	2 ft	9469705784				Parallel
NO	5 ft	3760001252	NT	5 ft	On request	NRO	5 ft	3760014018	NT2S	5 ft	3760014185	NTW	5 ft	9469705785				Parallel
NO	10 ft	3760001253	NT	10 ft	3760001228	NRO	10 ft	3760014019	NT2S	10 ft	3760014186	NTW	10 ft	9469705786				Parallel
			NCT	10 ft	3760015141	NCRO	10 ft	3760014029										Internally Upset
HO	2 ft	3760003439	HT	2 ft	3760001232	HRO	2 ft	3760014023				HTW	3 ft	9469711535				Parallel
HO	5 ft	3760001256	HT	5 ft	3760001233	HRO	5 ft	3760014024				HTW	5 ft	9469705763				Parallel
HO	10 ft	3760001257	HT	10 ft	3760001234	HRO	10 ft	3760014025				HTW	10 ft	9469705764				Parallel
			HCT	10 ft	3760015142	HCRO	10 ft	3760014049										Internally Upset
														PMO (HWT)	2 ft	3760015246		Parallel
														PMO (HWT)	5 ft	3760015247		Parallel
														PMO (HWT)	10 ft	3760015248		Parallel

## O rods

### Technical Specifications Overview

Description	BO	NO	HO
Rated maximum depth (m)	1 500	1 800	1 500
Outer diameter	55,6	69,9	88,9
Inner (Tool joint) diameter (mm)	46,0	60,3	77,8
3 m rod weight (kg)	17,9	22,7	34,3
<b>Raw material minimum specification</b>			
Yield strength minimum	690 Mpa		
Tensile strength minimum	813 Mpa		
<b>Joint destructive test results</b>			
Ultimate traction (kN)	257	356	488
Ultimate torsion (kN.m)	3,9	5,3	10,5
Minimum make-up torque (Nm / Ft-Lbs)	405 / 300	600 / 442	1010 / 750



Thread profile of O rods.

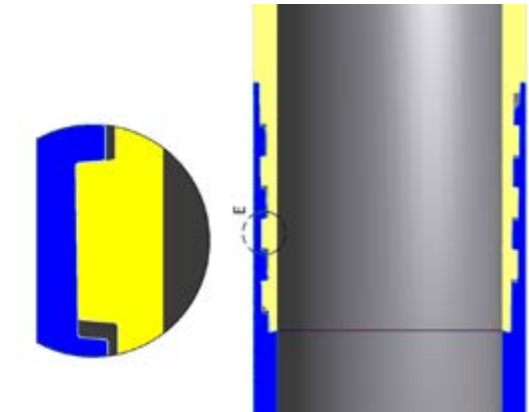
Specifications					
Size	Inner diameter		Outer diameter		Threads
	mm	in	mm	in	Per inch
*BO	46,0	1 13/16	55,6	2 3/16	3
*NO	60,3	2 3/8	69,9	2 3/4	3
*HO	77,8	3 1/16	88,9	3 1/2	3

\* Box and pin ends are heat treated. Pin end is phosphated to minimize galling.

## T rods

### Technical Specifications Overview

Description	BT	NT	HT	PT
Rated maximum depth (m)	2 600	2 600	2 200	1 750
Outer diameter	55,6	69,9	88,9	114,3
Inner (Tool joint) diameter (mm)	46,0	60,3	77,8	101,6
3 m rod weight (kg)	17,9	22,7	34,3	50,9
<b>Raw material minimum specification</b>				
Yield strength minimum	690 Mpa			
Tensile strength minimum	813 Mpa			
<b>Joint destructive test results</b>				
Ultimate traction (kN)	432	525	820	822
Ultimate torsion (kN.m)	6,0	8,7	20,3	17,2
Minimum make-up torque (Nm / Ft-Lbs)	405 / 300	600 / 442	1010 / 750	1010 / 750



Thread profile of T rods.

Specifications					
Size	Outer diameter		Inner diameter		Threads
	in	mm	in	mm	Per inch
*BT	2 3/16	55,6	1 13/16	46,0	3
*NT	2 3/4	69,9	2 3/8	60,3	3
*HT	3 1/2	88,9	3 1/16	77,8	3
PT	4 1/2	114,3	4	101,6	2

\* Box and pin ends are heat treated. Pin end is phosphated to minimize galling.

# T2S Drill Rods

## T2S Drill Rods – More safety, durability and efficiency

The T2S drill rod features a double entry thread for better safety and improved productivity. The T2S thread is based on the Tuff thread profile and is designed to be used with rod handlers and manipulators.

The T2S thread has two leading edges with one 180 degrees from the other. When threading by hand, the connection is easier to find, with less cross-threading. This makes threading rods easier and decreases the time required to make and break rods. With the T2S, only half the usual revolutions are required to make the joint. T2S threads also feature case hardening, a secondary heat treatment for enhanced durability.

### Improved safety

- Allows hands-free threading.
- Reduces chance of injuries to hands and soft tissue.
- Lower risk of repetitive use injuries.
- Less stress on wrists.
- Less rotation generates less fatigue.

### Improved efficiency

- Up to 50% less time required to thread rods.
- Less time waiting and more time drilling.

### Superior durability

- Reduces jamming and wedging.
- Lowers risk of threads stripping.
- Smoother starting for less wear.
- Case hardening for longer rod lifespan.

### Drill rod recommended usage



T2S threads will thread and unthread twice as fast as standard rod threads, so adjusting your parameters may be necessary.

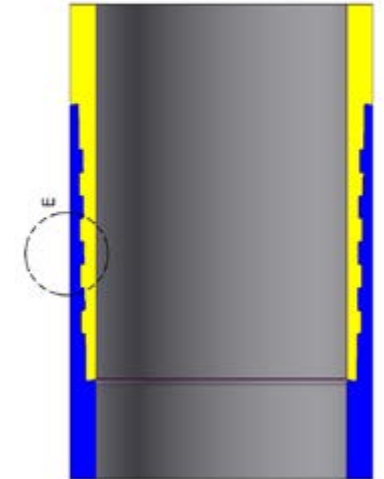


# T2S Drill Rods

## T2S rods

### Technical Specifications Overview

Description	NT2S
Rated maximum depth (m)	2 600
Outer diameter	69,9
Inner (Tool joint) diameter (mm)	60,3
3 m rod weight (kg)	22,7
<b>Raw material minimum specification</b>	
Yield strength minimum	690 Mpa
Tensile strength minimum	813 Mpa
<b>Joint destructive test results</b>	
Ultimate traction (kN)	525
Ultimate torsion (kN.m)	8,7
Minimum make-up torque (Nm / Ft-Lbs)	600 / 442



Thread profile of T2S rods.

Specifications					
Size	Outer diameter		Inner diameter		Threads
	in	mm	in	mm	Per inch
*NT2S	2 3/4	69,9	2 3/8	60,3	3

\* Box and pin ends are heat treated. Pin end is phosphated to minimize galling.

For greater convenience in your drilling operations, choose from these products, all compatible with the NT2S thread profile.

Description	Part No.
Sub NT2S r/pin to AW r/pin	3760014184
L/cplg NT2S hex w/ tang	3760014189
L/cplg NT2S hex wo/ tang	3760014190
W/swivel adapter NT2S PRO18+	3760014193
Stuf/box adap NT2S pin	3760014196
Sub NO r/box to NT2S r/pin	3760014197
Sub NT r/box to NT2S r/pin	3760014198
Sub NRO r/box to NT2S r/pin	3760014199
Sub NO r/pin to NT2S r/box	3760014417
Sub NT r/pin to NT2S r/box	3760014418

Description	Part No.
Sub NR r/pin to NT2S r/box	3760014419
Sub BW r/pin to NT2S r/pin	3760014420
Sub BW r/pin to NT2S r/box	3760014474
L/cplg NT2S hex pin thd w/ tang	3760014475
Tap comb N - NT2S r/box	3760014552
Tap NW/WT casing - NT2S r/box	3760014553
L/cplg NT2S STD w/ tang	3760014647
W/swivel assy NT2S PRO 25+	3760015226
W/swivel cplg NT2S PRO 25+	3760016308

T2S drill rods are suitable for both surface and underground drilling and are available in the following sizes:

Description	Length	Part No.
NT2S H/treat	5 ft	3760014185
NT2S H/treat	10 ft	3760014186
NT2S H/treat	1,5 m	3760014187
NT2S H/treat	3 m	3760014188

# RO Drill Rods

## RO-series (parallel wall rods)

- High depth capacity for demanding drilling.
- Flexible thread suitable for deviation drilling.
- Works in shallow hole just as well as O type thread but with way more pull back and torsion capacity.
- RO threads are perfectly matched to our lightweight wireline drill rods. CRO rods with 13%-27% less weight and all of the proven RO thread performance, are the ideal drill rods for deep hole applications or when weight is an issue.

## Heat treated and case hardened rods

RO and CRO rods go through a 2-stage heat treatment process. Initial heat treatment on both ends provides superior mechanical properties due to a change in steel microstructure. Final case hardening on the pin ends and 4.5" above prevents thread galling during make and break operations. This dramatically increases resistance to thread wear as well as wear resistance on the body of the pin thread where clamps and wrenches are usually placed.

## Quality

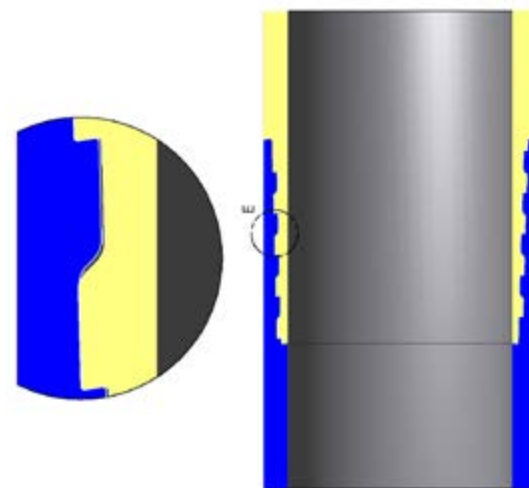
We use only top-rated, seamless, cold-drawn steel blanks from world class suppliers. Fordia Powered by Epiroc's uncompromising standards in all aspects of material specifications ensure our customers are getting the very best we have to offer.

## RO rods

### Technical Specifications Overview

Description	BRO	NRO	HRO
Rated maximum depth (m)	3 000	3 000	2 500
Outer diameter	55,6	69,9	88,9
Mid body inner diameter (mm)	46,0	60,3	77,8
Inner (tool joint) diameter (mm)	46,0	60,3	77,8
3m rod weight (kg)	17,9	22,7	34,3
Threads per inch	3	3	3
<b>Raw material minimum specification</b>			
Yield strength minimum	690 Mpa		
Tensile strength minimum	813 Mpa		
<b>Joint destructive test results</b>			
Ultimate traction (kN)	252	335	510
Ultimate torsion (kN.m)	5,89	9,09	20,80
Minimum make-up torque (Nm / Ft-Lbs)	405 / 300	600 / 442	1010 / 750

All RO and CRO rods are heat treated on both ends and case hardened on pin end.



Thread profile of RO rods.

# Composite Drill Rods

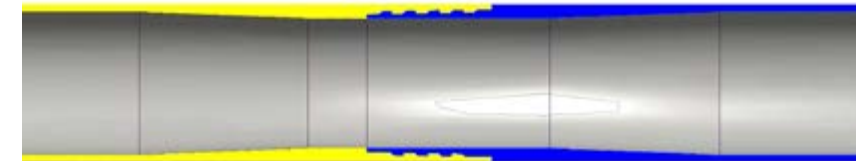
## Composite (C) rods (internally upset walls)

### Technical Specifications Overview

Description	NCT/NCRO	NT/NRO	HCT/HCRO	HT/HRO
Rated maximum depth (m)	3 000 / 3 300	2 600 / 3 000	2 650 / 3 000	2 200 / 2 500
Outer diameter (mm)	69,9	69,9	88,9	88,9
Mid body inner diameter (mm)	61,8	60,9	80,9	77,8
Inner (tool joint) diameter (mm)	60,3	60,3	77,8	77,8
3 m rod weight (kg)	19,9	22,7	25,0	34,3
Minimum make-up torque (Nm / Ft-Lbs)	600 / 442		1010 / 750	

## Weight comparison

Weight differential parallel wall versus internally upset wall - kgs			
	T/RO parallel wall	CT/CRO internally upset wall	% Weight decrease
N 3 m rod	22,7	19,9	13
H 3 m rod	34,3	25,0	27



CT rods have the same thread design as T rods, while CRO rods have the same thread design as RO rods. Wall thickness varies between the joint section (where it is the same as for parallel RO, T, and O rods) and mid-body where it is thinner, to reduce overall weight of the drill strings, although it provides the same as RO and T rod yield and tensile strengths.



# TW Drill Rods

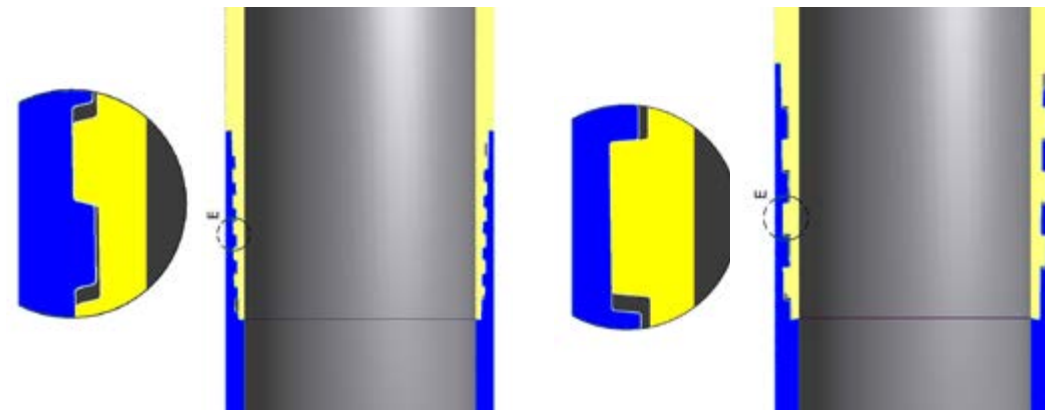
# Casing

## Technical Specifications Overview

Specifications					
Size	Inner diameter		Outer diameter		Threads
	mm	in	mm	in	Per inch
*ATW	36,8	1.45	44,5	1.75	**4
*BTW	48,8	1.92	56,5	2.23	**4
*NTW	64,3	2.53	73,0	2.87	**4
*HTW	81,5	3.21	90,1	3.58	2.5

\* Box and pin ends are heat treated.

\*\* Metric thread from 5.5 mm pitch.



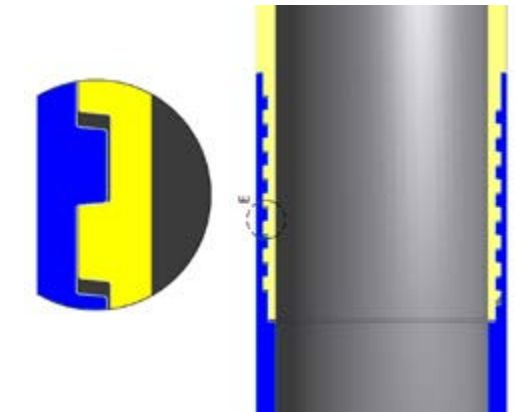
Thread profile of ATW, BTW & NTW rods.

Thread profile of HTW rods.

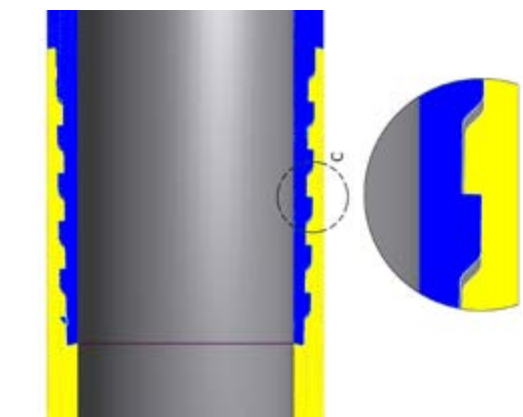


## Technical Specifications Overview

Description	Length	Weight		Part No.
		m	Kg	
AW	0,6 m	3,73	8.223	3760 0012 60
AW	1,5 m	8,85	19.510	3760 0012 61
AW	3,0 m	16,71	36.839	3760 0012 62
BW	0,6 m	6,26	13.800	3760 0012 63
BW	1,5 m	15,65	34.502	3760 0012 64
BW	3,0 m	31,27	68.938	3760 0012 65
NW	0,6 m	7,48	16.490	3760 0012 66
NW	1,5 m	18,6	41.005	3760 0012 67
NW	3,0 m	39,05	86.090	3760 0012 68
NWT	1,5 m	18,6	41.005	3760 0165 72
NWT	3,0 m	39,05	86.090	3760 0165 73
HW	0,6 m	10,24	22.575	3760 0012 69
HW	1,5 m	25,4	55.997	3760 0012 70
HW	3,0 m	50,8	112.100	3760 0012 71
HWT	0,6 m	10,24	22.575	3760 0050 93
HWT	1,5 m	25,4	55.997	3760 0050 94
HWT	3,0 m	50,8	112.100	3760 0048 21
PW	0,6 m	13,78	30.379	3760 0078 87
PW	1,5 m	34,02	75.001	3760 0078 88
PW	3,0 m	64,27	141.691	3760 0078 79
PWT	0,6 m	13,78	30.379	3760 0150 60
PWT	1,5 m	34,02	75.001	3760 0120 66
PWT	3,0 m	64,27	141.691	3760 0150 62



W casing.



WT casing.

### WT thread advantages over W thread:

- Greater depth capacity.
- Coarser thread which makes it easier and quicker to thread and unthread.
- Less prone to damage.
- More suitable for multiple installations.

Specifications					
Size	Inner diameter		Outer diameter		Threads
	mm	in	mm	in	Per inch
AW	48,4	1 29/32	57,1	2 1/4	4
BW	60,3	2 3/8	73,0	2 7/8	4
NW/NWT	76,2	3	88,9	3 1/2	4 / 2.5
HW / HWT	101,6	4	114,3	4 1/2	4 / 2.5
PW / PWT	127,0	5	140,0	5 1/2	3 / 2.5

All casings longer than 5ft/1.5m are phosphated on pin end to minimize galling.

Size	Recommended max installation depth
AW	1500 m / 4921 ft
BW	1200 m / 3937 ft
NW	1000 m / 3280 ft
NWT	1200 m / 3937 ft
HW	900 m / 2953 ft
HWT	1100 m / 3609 ft
PW	700 m / 2297 ft
PWT	900 m / 2953 ft



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