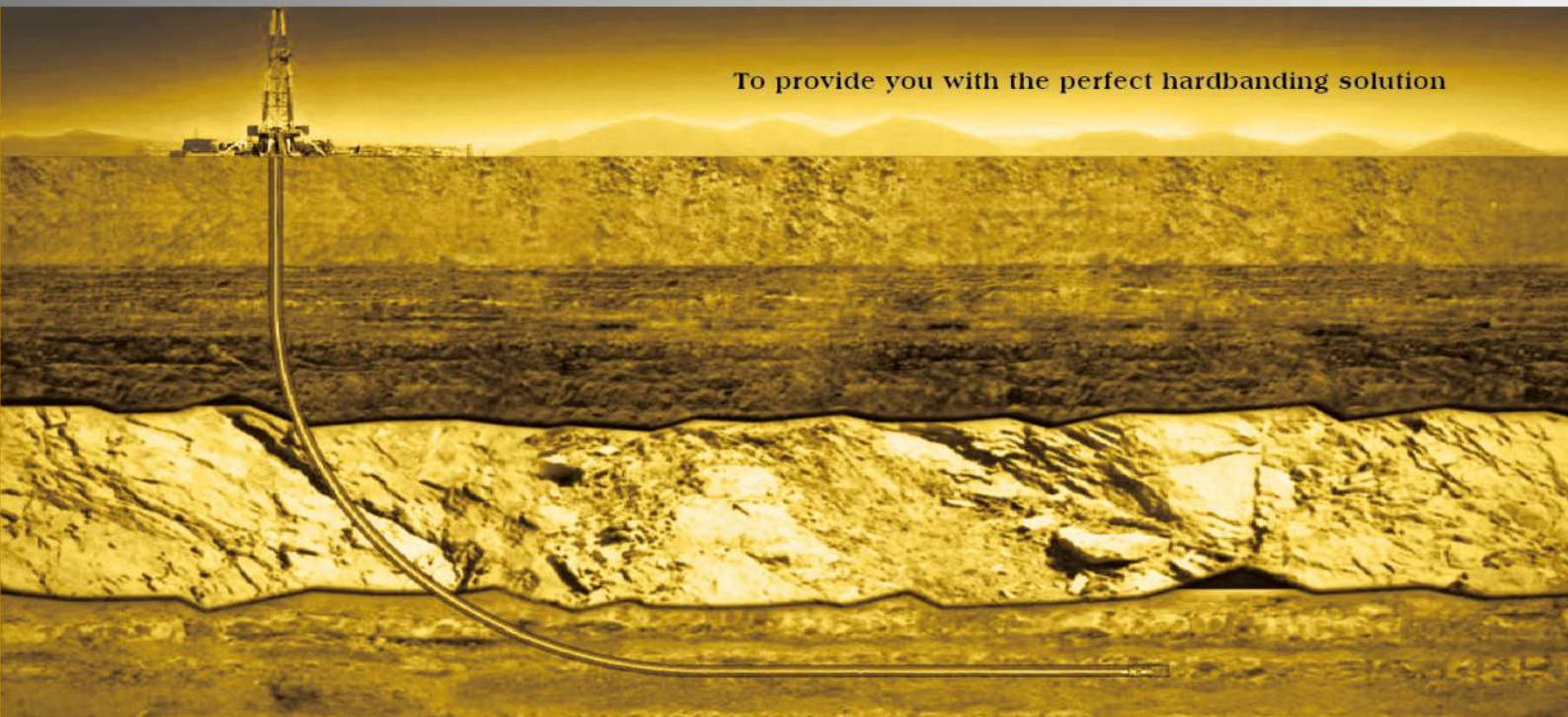
BoTn
HARDBANDING

Shanghai Boteng Welding Consumables Co.,Ltd



BoTn

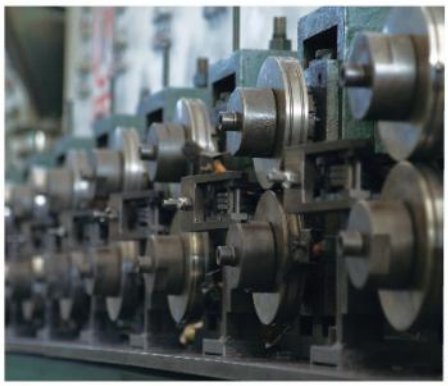
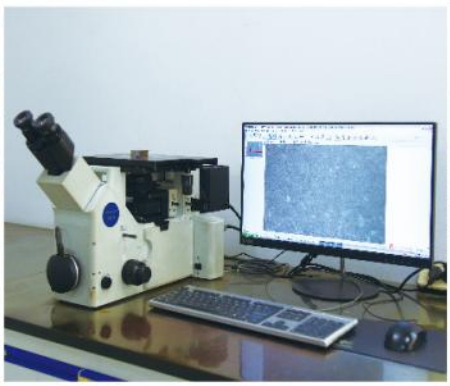
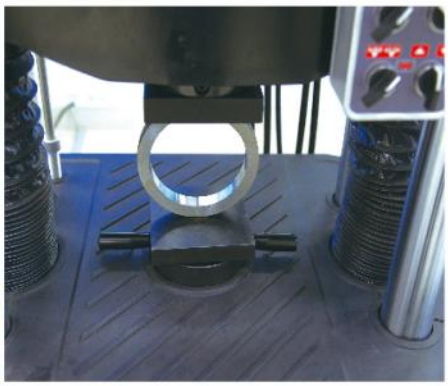
BoTn 1000
CASING FRIENDLY

BoTn 3000
MOST VERSATILE

BoTn 5000
SEVERE DUTY





BoTn Hardbanding

BoTn hardbanding provides you with the perfect hardbanding solution, and can meet the higher requirements of harsh wells such as deep wells, ultra-deep wells, extended reach wells and horizontal wells.

Strong R&D ability of wear resistant materials and leading design guidelines of balanced anti-wear and friction-reduction

Shanghai BoTeng Welding Consumables CO.,Ltd has strong R&D ability of wear-resistant materials, specializing in the research and development, production and related technical services of hardbanding wire for drilling string, sucker rod string etc. The company's laboratory has obtained CNAS certificate.

For the first time, the idea of "balanced anti-wear and friction-reduction design" is applied to the research and development of hardbanding wire for drill pipe. After more than 20 years of research and development, the company has developed BoTn1000, BoTn3000 and BoTn5000 series of hardbanding wire with high anti-wear and friction-reduction performance. BoTn series hardbanding products have been evaluated in many third-party authoritative laboratories(Mohr Engineering Division, Bodycote Materials Inc, Howard&Associates International Inc, Russia MTService LLC, Xi 'an maurer Petroleum Engineering Laboratory, etc.), and the experimental results have proven the excellent performance.

BoTn series hardbanding has carried out downhole comparison tests by many oilfield customers such as ENSIGN Canadian drilling in Canada, KCA Deutag Russia Team, Tarim Oilfield of PetroChina, Shengli Oilfield of Sinopec, Southwest oil and gas Field of Sinopec, etc. these downhole testing results have been recognized by customers and won their choice.

Independent production and quality assurance

The company has advanced hardbanding wire production and inspection equipments, and has passed ISO9001 quality management system, ISO14001 environment management system and ISO45001 occupational health and safety management system certification.

More important, BoTn series hardbanding products have also passed NS-1 certification.





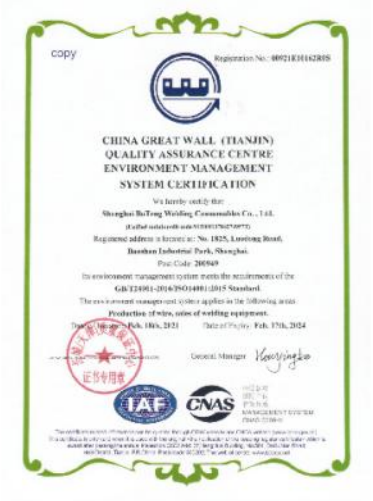
Qualification certificate











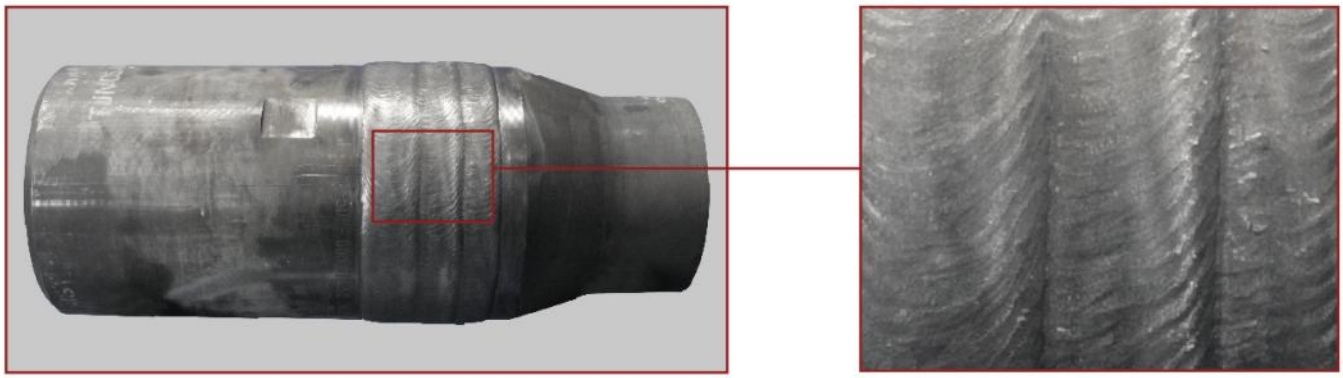








BoTn 1000 CASING FRIENDLY



BoTn1000: The true Casing friendly hardbanding

It is a true casing friendly hardbanding that minimizes casing wear during drilling activities, protecting your casing in the meantime of providing good wear resistance and extending the drill pipe's life. According to the comparative evaluation of 13 kinds of hardbanding wires used in the market by the third party authoritative laboratories' (MTService LLC, Bauman Moscow State Technical University, Siberian Service Company JSC) in Russia, BoTn1000 ranks first in terms of minimal casing wear (See: Volume 53 of the ROGTEC Magazine).

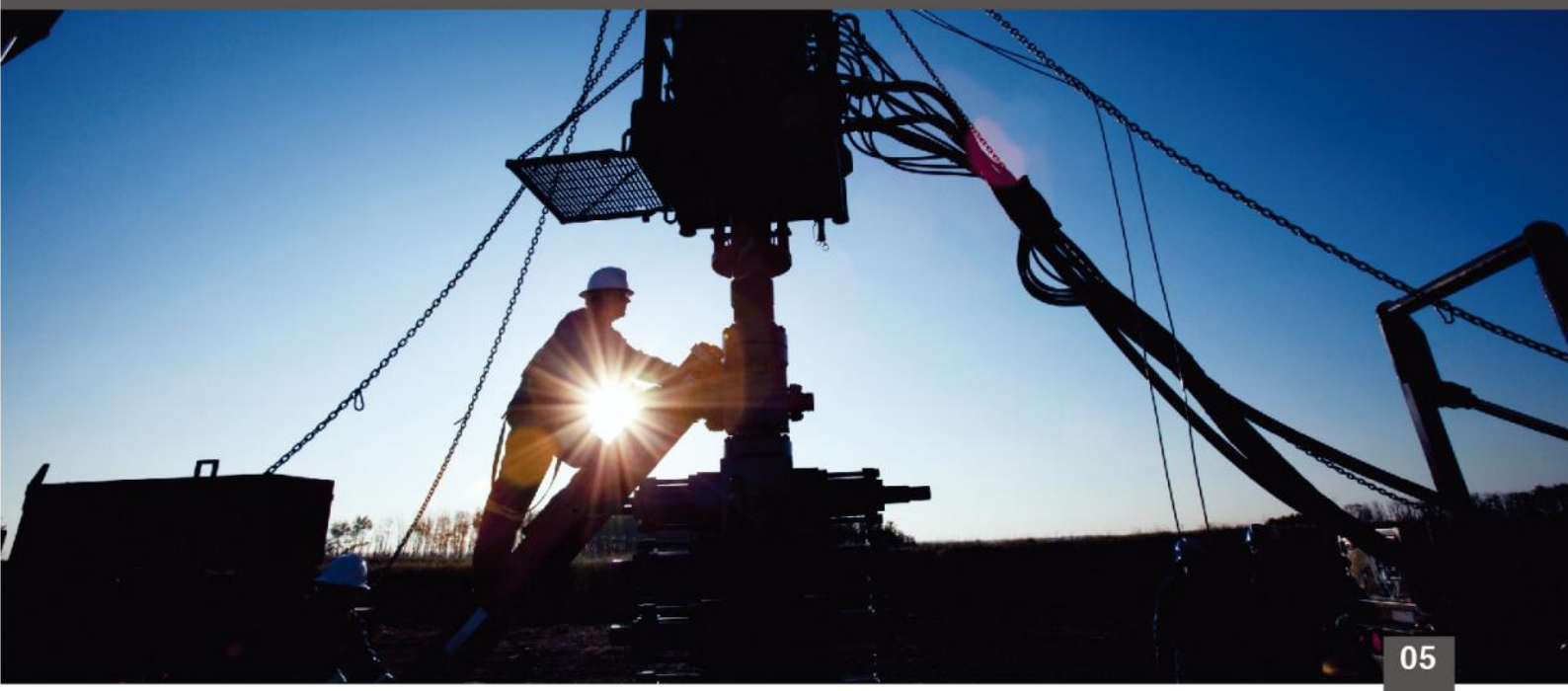
BoTn1000 has excellent welding performance, suitable for on-site poor welding conditions, easy to apply and repair.

Key Benefits of BoTn1000

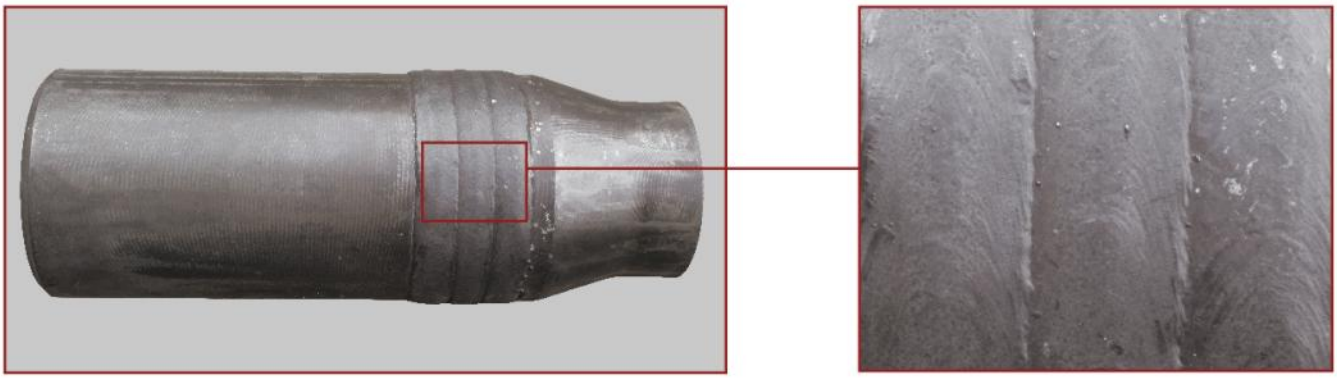
- Extremely casing-friendly
- Crack free
- Good anti-wear property and extended tool joint life
- No spalling, chipping, or flaking
- Fully compatible with all “non-cracking” hardbanding products
- Excellent weldability and suitable for on-site poor welding conditions

Main applications of BoTn1000:

- High requirements for casing protection, strong drilling wear environment.
- Poor welding conditions on-site, such as: preheating conditions and insulation conditions are incomplete.
- Recommended Application: Drill pipe



BoTn3000
MOST VERSATILE



BoTn3000: Perfect comprehensive performance hardbanding

It has very good wear resistance and can significantly reduce drill pipe wear in harsh drilling conditions, protect the drill pipe while protecting the casing. Therefore, it has comprehensive performance in achieving the perfect combination of wearing resistant and casing protection.

Key Benefits of BoTn3000

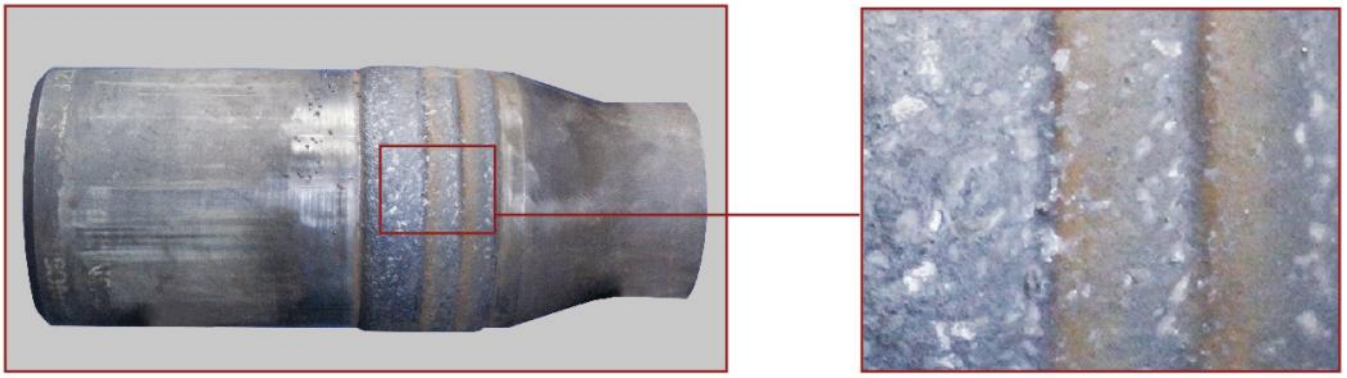
- Excellent tool joint protection
- Superior Casing Wear Protection
- Crack free
- No spalling, chipping, or flaking
- Fully compatible with all “non-cracking” hardbanding products

Main applications of BoTn3000 :

- Harsh drilling environment with high requirements for casing protection. Such as deep and ultra-deep wells, long extension horizontal wells and other harsh wells.
- Recommended Application: Drill pipe, Heavy Weight Drill Pipe and Drill Collar.



BoTn5000 SEVERE DUTY



BoTn5000: Best solution for very harsh abrasive drilling conditions.

It provides excellent wear resistance to maximize protection of your drill pipe, even in very demanding drilling environments such as open hole sections in complex formation, extended-reach wells,horizontal wells, deep and ultra-deep wells.

According to the comparative evaluation of 13 kinds of hardbanding wires in the market by the third party authoritative laboratories (MTService LLC, Bauman Moscow State Technical University, Siberian Service Company JSC) in Russia, BoTn5000 ranks the first in wear resistance (See: Volume 53 of the ROGTEC Magazine).

Therefore, BoTn5000 is the best choice for very harsh abrasive drilling conditions.

Key Benefits of BoTn5000

- Maximum Tool Joint Protection
- Extended tool joint life more than ten times
- Very casing-friendly
- Crack free
- No spalling, chipping, or flaking
- Fully compatible with all “non-cracking” hardbanding products
- Very good weldability

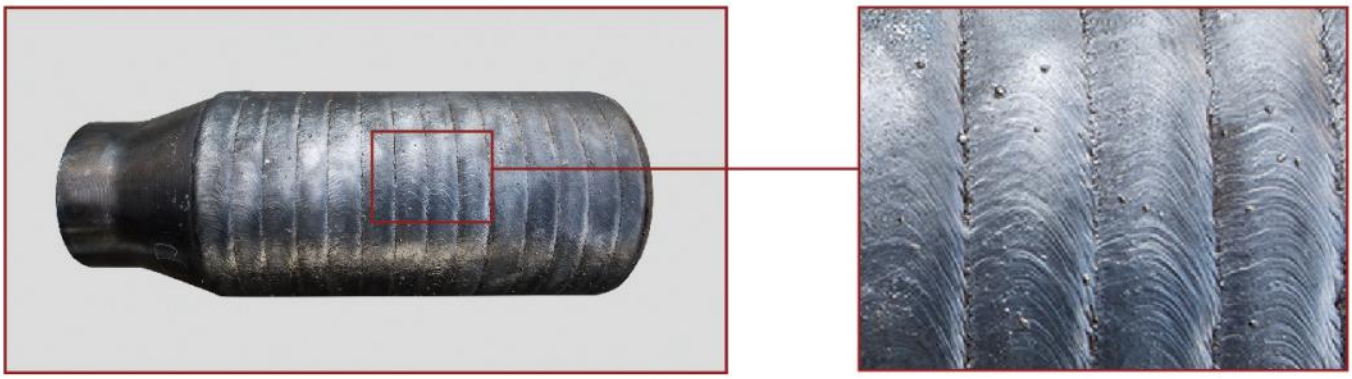
Main applications of BoTn5000:

- Very harsh abrasive drilling conditions and high requirement for casing protection such as Open hole sections in complex formations, deep and ultra-deep wells, horizontal wells, extended reach wells and other very harsh wells.
- Recommended Application: Drill pipe, Heavy Weight Drill Pipe and Drill Collar





BoTn-R
REPAIR TOOL JOINT



BoTn-R: Special welding wire for repairing tool joint

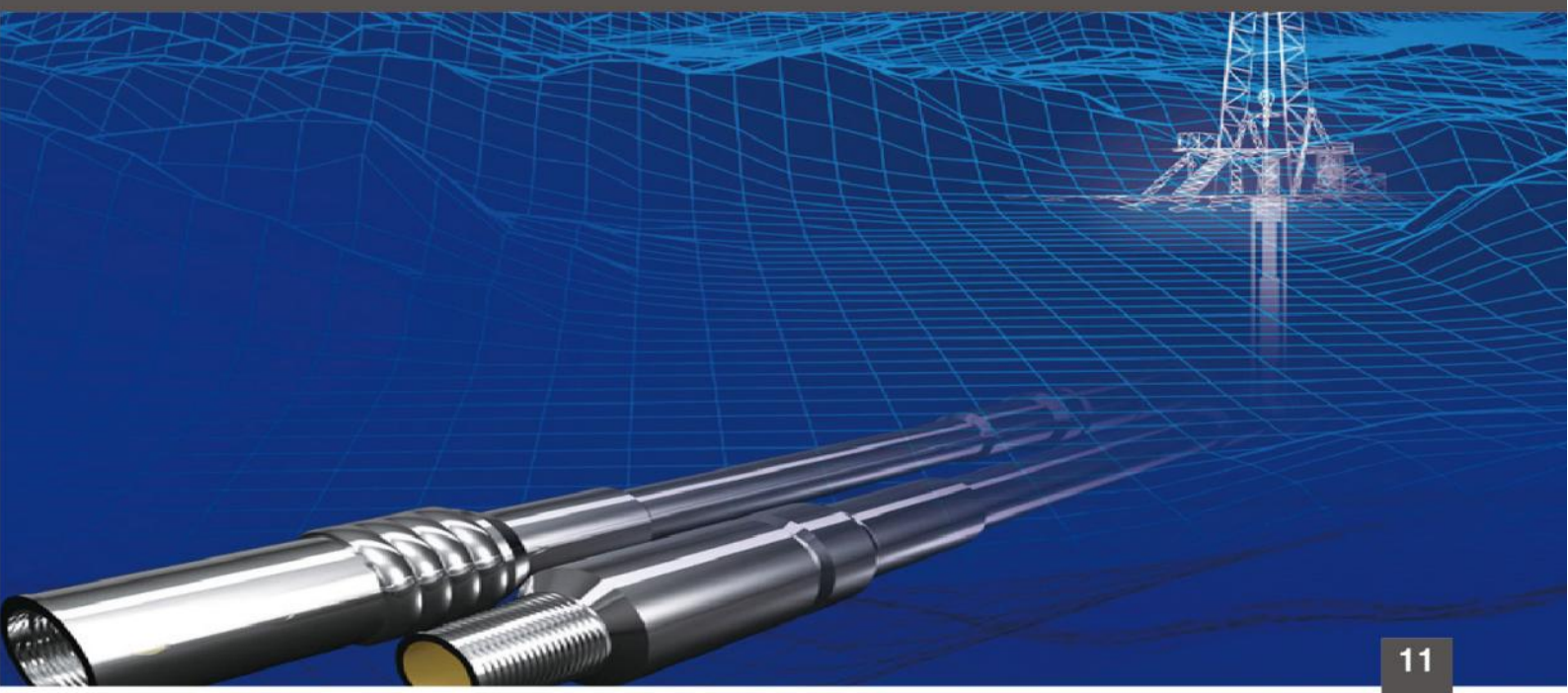
The flux-cored welding wire is specially developed for the repair of drill pipe tool joint and pipe body. It can be used to repair the hardbanding of the tool joint as a bottom filler material. It is also suitable for repairing or rebuilding the diameter of the tool joint.

Key Benefits of BoTn-R:

- The performance of the surfacing layer is equivalent to that of the tool joint material.
- Crack free
- Firmly combined with tool joint base material and hardbanding material.
- Good compatibility
- Excellent weldability
- Hardness range: HRC30-36

Main applications of BoTn-R:

- Serve as filling material for tool joints before hardbanding repair.
- Used to repair the full length OD wear of the tool joint.
- Rebuild the tool joint tong space.

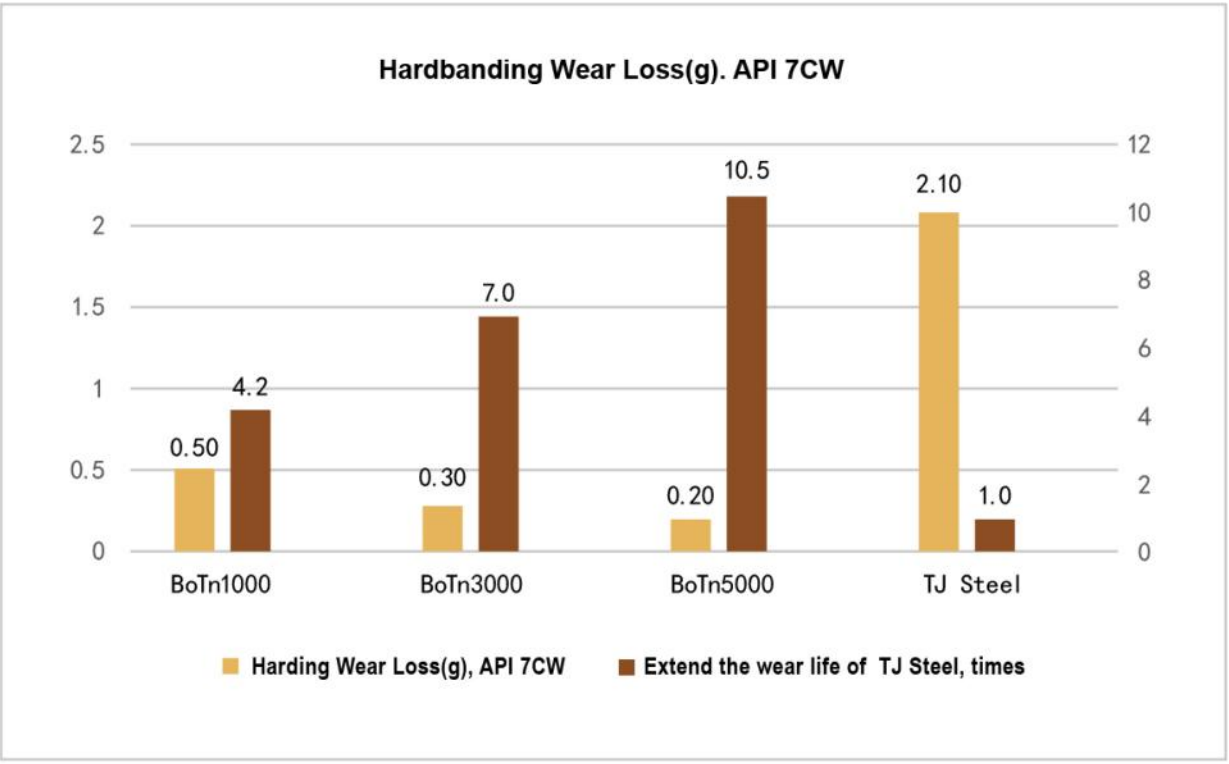


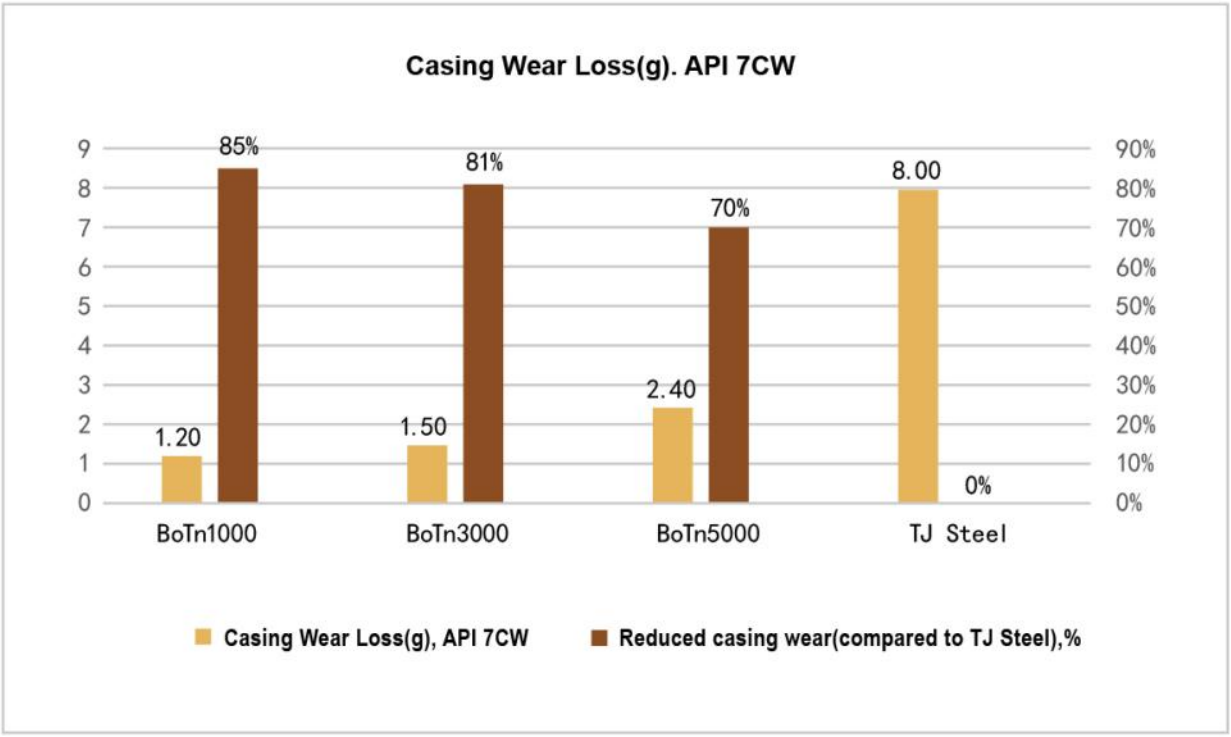
■ BoTn series hardbanding performance parameters:

	BoTn1000	BoTn3000	BoTn5000	TJ Steel
Hardness(HRC)	⩾57	⩾57	⩾57	285~331 HB
Hardbanding Wear Loss(g),API 7CW	0.50	0.30	0.20	2.10
Extend the wear life of TJ Steel,times	4.2	7.0	10.5	1.0
Casing Wear Loss(g), API 7CW	1.20	1.50	2.40	8.00
Reduced casing wear(compared to TJ Steel),%	85%	81%	70%	0%





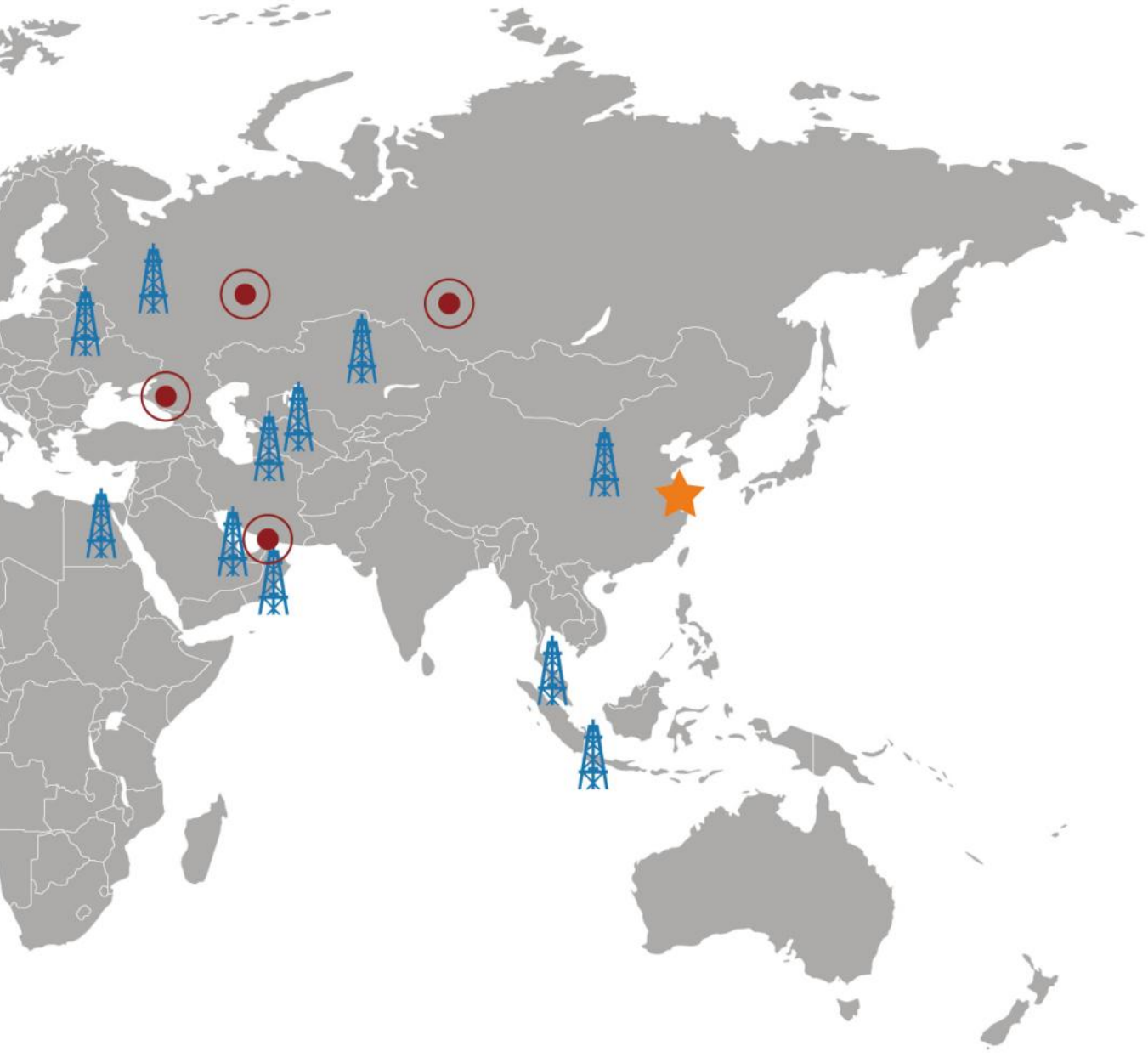

Hardbanding Wear Loss(g). API 7CW
2.5
2
1.5
1
0.5
0
12
10
8
6
4
2
0
0.50
4.2
0.30
7.0
0.20
10.5
2.10
1.0
BoTn1000
BoTn3000
BoTn5000
TJ Steel
Harding Wear Loss(g), API 7CW
Extend the wear life of TJ Steel, times


Casing Wear Loss(g). API 7CW
9
8
7
6
5
4
3
2
1
0
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
1.20
85%
1.50
81%
2.40
70%
8.00
0%
BoTn1000
BoTn3000
BoTn5000
TJ Steel
Casing Wear Loss(g), API 7CW
Reduced casing wear(compared to TJ Steel),%



Global presence:

Major domestic oil fields in China, USA, Canada, Russia, Belarus, Kazakhstan, Turkmenistan, Ecuador, Bolivia, Malaysia, Thailand, Oman, Egypt, Syria, Indonesia and UAE



International Sales offices:

Shanghai, Houston, Edmonton, Ekaterinburg, orenburg, Surgut, Abu Dhabi

Headquarters:

Shanghai

BoTn
HARDBANDING

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