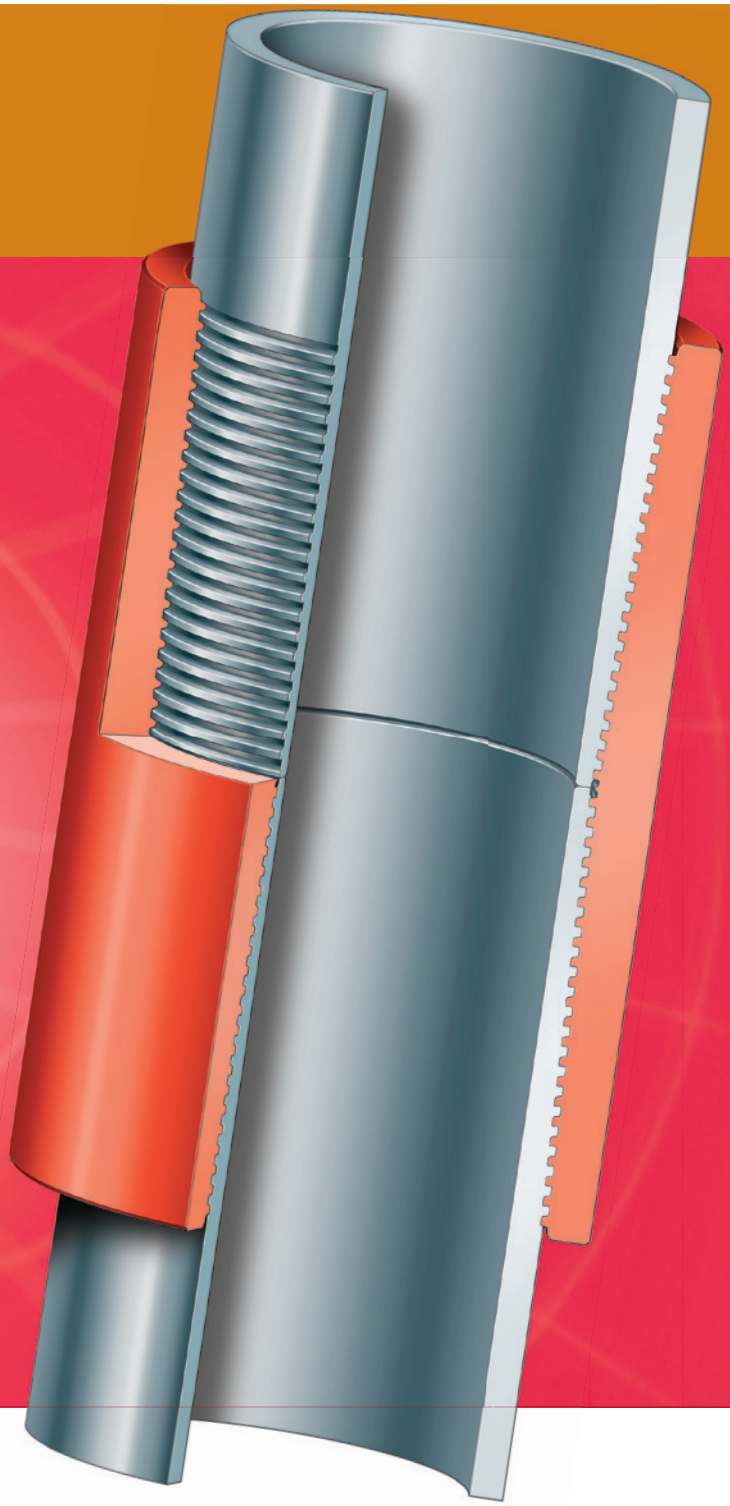
GEOCONN

GEOCONN 4-1/2" ~20"



Low Cost & High Performance Casing Connection

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Metal One

GEOCONN Feature of Design

Completely interchangeable with API BTC

As GEOCONN is perfectly interchangeable with API Buttress, Casing accessories with Buttress thread may be used.

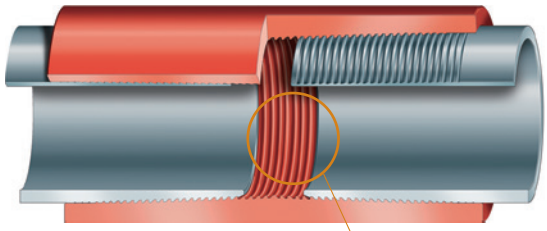
Internally flush with pin abutment

- Prevention of turbulence flow
- High over torque resistance
- Abutment works as metal seal under medium tension loads
- High fatigue resistance

These feature are added on API Buttress thread.

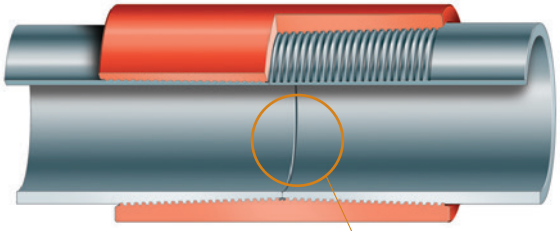
API Buttress VS GEOCONN

API Buttress



Coupling center has gap

GEOCONN



Pin Abutment

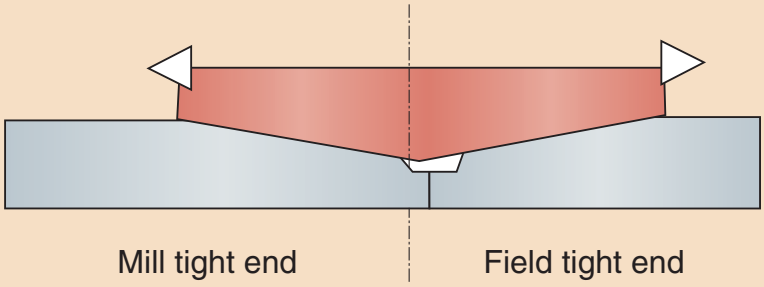
Manufacturing of GEOCONN

Manufacturing of **GEOCONN** is almost same as Buttress,
except shorter coupling length and mill end make up.

GEOCONN Mill Make-up Position

Mill tight end is made up deeper than field tight end to prevent mill end rotation during field end make-up.

Make up distance on both ends were chosen to provide good leak resistance and prevent from too high hoop stress on the coupling



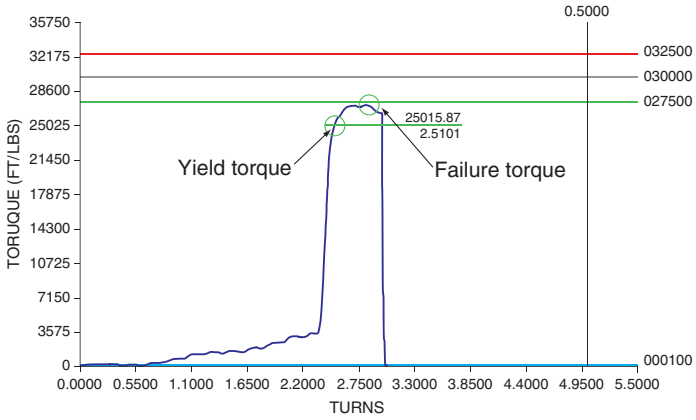
Mill tight end Field tight end

GEOCONN Technical Data

Test results of over-torque to yielding

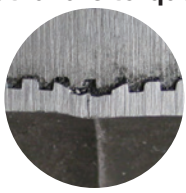
torque (ft-lbs)

Size	Grade	GEOCONN Yield Torq.	API BTC Max. Torq.
5-1/2" x 20#	L80	15,600	3,400
	P110	23,000	4,700
7" x 26 #	L80	25,000	6,300
	P110	36,800	8,500
9-5/8" x 47#	L80	63,100	14,400
	P110	89,000	17,600
13-3/8" x 72#	L80	128,800	18,900
	P110	183,600	26,000



at yield torque

at failure torque



Tension to failure test after 100% Compression

9-5/8" x 40# L80 GEOCONN

Test Result

Actual failure load	1,451 kips
Pipe body yield load	1,086 kips
Joint Strength	1,122 kips

Finite Element Analysis Data

Shoulder type seal works as good metal to metal seal as long as shoulder is closed. But high tension may open the gap on the shoulder. Figure shows how tension affects on the contact pressure (= sealability) on the shoulder on 4-1/2" x 13.5# L80 GEOCONN.

This figure implies that even T80
(80% pipe body yield tension) does not open the shoulder.

GEOCONN Examples of Application

Geothermal Wells

Prevention of turbulence flow

SAGD

Liner for SAGD wells

Drilling with Casing

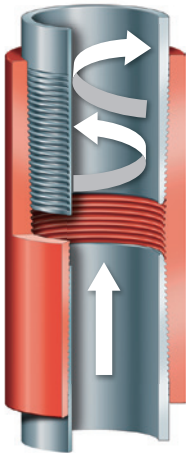
For high torque resistance

Shale Plays

Full string for Shale or tight plays

Geothermal wells

API BTC



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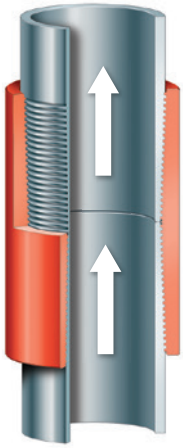

PROBLEM

1. Gap at the center of coupling causes turbulence flow
2. Scale build up at gap
3. Buttress threads have poor leak resistance against gas = steam

SOLUTION

1. Prevention of turbulence flow
2. Abutment works as metal seal during production at high temperature

GEOCONN-RS

1 Special RS rings enhance leak resistance against gas = 100% API Burst pressure

2 Feature of special resilient seal rings of **GEOCONN-RS**;
Dimensions of groove and ring are specified tighter than API modified coupling to control within tight range of fill ratio of ring . Influence of fill ratio are ;
Max. Groove volume vs. Min. ring volume → Increase chance of Leak
Min. Groove volume vs. Max. ring volume
→ High hoop stress may induce SSC in sour environment or Jump-out of connection