

# Connection Data Sheet

## NSMAX™-GR

### Material Grade: 55 ksi

#### Available Sizes

OD (inch)	Nominal Weight (lbs/ft)
18	94.0
	105.0
	117.0
	119.0
	128.0
18-5/8	87.5
	94.5
	96.5
	101.0
	106.0
	109.4
	112.0
	115.0
	122.0
	136.0
20	94.0
	106.5
	117.0
	133.0
	144.0

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O.D. (inch)	Weight (lb/ft)	Wall Thickness (inch)	Grade	Drift D. (inch)	Connection
18.000	94.0	0.500	J55	16.812	NSMAX™-GR

### Grade - Material Property

Minimum Yield Strength :	55	ksi
Maximum Yield Strength :	80	ksi
Minimum Tensile Strength :	75	ksi

### Pipe Body Data (PE)

<u>Geometry</u>		
Nominal OD :	18.000	inch
Nominal ID :	17.000	inch
Nominal Cross section Area :	27.489	sqin.
Min. Wall Thickness :	92.5	%
<u>Property</u>		
Tensile Yield Strength :	1,512	klb
Compression Yield Strength :	1,512	klb
External (collapse) Pressure :	1,060	psi
Internal Yield Pressure :	2,830	psi

### Connection Data

<u>Geometry</u>		
Connection OD (nom) :	18.937	inch
Connection ID (nom) :	17.000	inch
Make-up Loss :	5.549	inch
Coupling Length :	12.280	inch
Critical Cross Section :	27.489	sqin.
<u>Efficiency</u>		
Tension Efficiency :	100	% of pipe
Compression Efficiency :	100	% of pipe
External Pressure Efficiency :	100	% of pipe
Internal Pressure Efficiency :	100	% of pipe
<u>Torque</u>		
Min. Make-up Torque :	15,570	ft.lbs
Opt. Make-up Torque :	17,300	ft.lbs
Max. Make-up Torque :	19,030	ft.lbs
Min. Shouldering Torque :	1,730	ft.lbs
Max. Shouldering Torque :	15,570	ft.lbs

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O.D. (inch)	Weight (lb/ft)	Wall Thickness (inch)	Grade	Drift D. (inch)	Connection
18.000	105.0	0.562	J55	16.688	NSMAX™-GR

### Grade - Material Property

Minimum Yield Strength :	55	ksi
Maximum Yield Strength :	80	ksi
Minimum Tensile Strength :	75	ksi

### Pipe Body Data (PE)

<u>Geometry</u>		
Nominal OD :	18.000	inch
Nominal ID :	16.876	inch
Nominal Cross section Area :	30.788	sqin.
Min. Wall Thickness :	92.5	%
<u>Property</u>		
Tensile Yield Strength :	1,693	klb
Compression Yield Strength :	1,693	klb
External (collapse) Pressure :	1,440	psi
Internal Yield Pressure :	3,180	psi

### Connection Data

<u>Geometry</u>		
Connection OD (nom) :	18.937	inch
Connection ID (nom) :	16.876	inch
Make-up Loss :	5.549	inch
Coupling Length :	12.280	inch
Critical Cross Section :	30.788	sqin.
<u>Efficiency</u>		
Tension Efficiency :	100	% of pipe
Compression Efficiency :	100	% of pipe
External Pressure Efficiency :	100	% of pipe
Internal Pressure Efficiency :	100	% of pipe
<u>Torque</u>		
Min. Make-up Torque :	17,190	ft.lbs
Opt. Make-up Torque :	19,100	ft.lbs
Max. Make-up Torque :	21,010	ft.lbs
Min. Shouldering Torque :	1,910	ft.lbs
Max. Shouldering Torque :	17,190	ft.lbs

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O.D. (inch)	Weight (lb/ft)	Wall Thickness (inch)	Grade	Drift D. (inch)	Connection
18.000	117.0	0.625	J55	16.562	NSMAX™-GR

Grade - Material Property		
Minimum Yield Strength :	55	ksi
Maximum Yield Strength :	80	ksi
Minimum Tensile Strength :	75	ksi

Pipe Body Data (PE)		
<u>Geometry</u>		
Nominal OD :	18.000	inch
Nominal ID :	16.750	inch
Nominal Cross section Area :	34.116	sqin.
Min. Wall Thickness :	92.5	%
<u>Property</u>		
Tensile Yield Strength :	1,876	klb
Compression Yield Strength :	1,876	klb
External (collapse) Pressure :	1,820	psi
Internal Yield Pressure :	3,530	psi

Connection Data		
<u>Geometry</u>		
Connection OD (nom) :	19.055	inch
Connection ID (nom) :	16.750	inch
Make-up Loss :	6.252	inch
Coupling Length :	13.685	inch
Critical Cross Section :	34.116	sqin.
<u>Efficiency</u>		
Tension Efficiency :	100	% of pipe
Compression Efficiency :	100	% of pipe
External Pressure Efficiency :	100	% of pipe
Internal Pressure Efficiency :	100	% of pipe
<u>Torque</u>		
Min. Make-up Torque :	23,850	ft.lbs
Opt. Make-up Torque :	26,500	ft.lbs
Max. Make-up Torque :	29,150	ft.lbs
Min. Shouldering Torque :	2,650	ft.lbs
Max. Shouldering Torque :	23,850	ft.lbs

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O.D. (inch)	Weight (lb/ft)	Wall Thickness (inch)	Grade	Drift D. (inch)	Connection
18.000	119.0	0.640	J55	16.532	NSMAX™-GR

### Grade - Material Property

Minimum Yield Strength :	55	ksi
Maximum Yield Strength :	80	ksi
Minimum Tensile Strength :	75	ksi

### Pipe Body Data (PE)

<u>Geometry</u>		
Nominal OD :	18.000	inch
Nominal ID :	16.720	inch
Nominal Cross section Area :	34.904	sqin.
Min. Wall Thickness :	92.5	%
<u>Property</u>		
Tensile Yield Strength :	1,920	klb
Compression Yield Strength :	1,920	klb
External (collapse) Pressure :	1,910	psi
Internal Yield Pressure :	3,620	psi

### Connection Data

<u>Geometry</u>		
Connection OD (nom) :	19.055	inch
Connection ID (nom) :	16.720	inch
Make-up Loss :	6.252	inch
Coupling Length :	13.685	inch
Critical Cross Section :	34.904	sqin.
<u>Efficiency</u>		
Tension Efficiency :	100	% of pipe
Compression Efficiency :	100	% of pipe
External Pressure Efficiency :	100	% of pipe
Internal Pressure Efficiency :	100	% of pipe
<u>Torque</u>		
Min. Make-up Torque :	24,390	ft.lbs
Opt. Make-up Torque :	27,100	ft.lbs
Max. Make-up Torque :	29,810	ft.lbs
Min. Shouldering Torque :	2,710	ft.lbs
Max. Shouldering Torque :	24,390	ft.lbs

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O.D. (inch)	Weight (lb/ft)	Wall Thickness (inch)	Grade	Special Drift D. (inch)	Connection
18.000	128.0	0.688	J55	16.500	NSMAX™-GR

### Grade - Material Property

Minimum Yield Strength :	55	ksi
Maximum Yield Strength :	80	ksi
Minimum Tensile Strength :	75	ksi

### Pipe Body Data (PE)

<u>Geometry</u>		
Nominal OD :	18.000	inch
Nominal ID :	16.624	inch
Nominal Cross section Area :	37.418	sqin.
Min. Wall Thickness :	92.5	%
<u>Property</u>		
Tensile Yield Strength :	2,058	klb
Compression Yield Strength :	2,058	klb
External (collapse) Pressure :	2,200	psi
Internal Yield Pressure :	3,890	psi

### Connection Data

<u>Geometry</u>		
Connection OD (nom) :	19.055	inch
Connection ID (nom) :	16.624	inch
Make-up Loss :	6.252	inch
Coupling Length :	13.685	inch
Critical Cross Section :	37.418	sqin.
<u>Efficiency</u>		
Tension Efficiency :	100	% of pipe
Compression Efficiency :	100	% of pipe
External Pressure Efficiency :	100	% of pipe
Internal Pressure Efficiency :	100	% of pipe
<u>Torque</u>		
Min. Make-up Torque :	25,920	ft.lbs
Opt. Make-up Torque :	28,800	ft.lbs
Max. Make-up Torque :	31,680	ft.lbs
Min. Shouldering Torque :	2,880	ft.lbs
Max. Shouldering Torque :	25,920	ft.lbs

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O.D. (inch)	Weight (lb/ft)	Wall Thickness (inch)	Grade	Drift D. (inch)	Connection
18.625	87.5	0.435	J55	17.567	NSMAX™-GR

### Grade - Material Property

Minimum Yield Strength :	55	ksi
Maximum Yield Strength :	80	ksi
Minimum Tensile Strength :	75	ksi

### Pipe Body Data (PE)

<u>Geometry</u>		
Nominal OD :	18.625	inch
Nominal ID :	17.755	inch
Nominal Cross section Area :	24.858	sqin.
Min. Wall Thickness :	92.5	%
<u>Property</u>		
Tensile Yield Strength :	1,367	klb
Compression Yield Strength :	1,367	klb
External (collapse) Pressure :	630	psi
Internal Yield Pressure :	2,380	psi

### Connection Data

<u>Geometry</u>		
Connection OD (nom) :	19.626	inch
Connection ID (nom) :	17.755	inch
Make-up Loss :	5.614	inch
Coupling Length :	12.409	inch
Critical Cross Section :	24.858	sqin.
<u>Efficiency</u>		
Tension Efficiency :	100	% of pipe
Compression Efficiency :	100	% of pipe
External Pressure Efficiency :	100	% of pipe
Internal Pressure Efficiency :	100	% of pipe
<u>Torque</u>		
Min. Make-up Torque :	14,850	ft.lbs
Opt. Make-up Torque :	16,500	ft.lbs
Max. Make-up Torque :	18,150	ft.lbs
Min. Shouldering Torque :	1,650	ft.lbs
Max. Shouldering Torque :	14,850	ft.lbs

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O.D. (inch)	Weight (lb/ft)	Wall Thickness (inch)	Grade	Drift D. (inch)	Connection
18.625	94.5	0.468	J55	17.501	NSMAX™-GR

### Grade - Material Property

Minimum Yield Strength :	55	ksi
Maximum Yield Strength :	80	ksi
Minimum Tensile Strength :	75	ksi

### Pipe Body Data (PE)

<u>Geometry</u>		
Nominal OD :	18.625	inch
Nominal ID :	17.689	inch
Nominal Cross section Area :	26.696	sqin.
Min. Wall Thickness :	92.5	%
<u>Property</u>		
Tensile Yield Strength :	1,468	klb
Compression Yield Strength :	1,468	klb
External (collapse) Pressure :	780	psi
Internal Yield Pressure :	2,560	psi

### Connection Data

<u>Geometry</u>		
Connection OD (nom) :	19.626	inch
Connection ID (nom) :	17.689	inch
Make-up Loss :	5.614	inch
Coupling Length :	12.409	inch
Critical Cross Section :	26.696	sqin.
<u>Efficiency</u>		
Tension Efficiency :	100	% of pipe
Compression Efficiency :	100	% of pipe
External Pressure Efficiency :	100	% of pipe
Internal Pressure Efficiency :	100	% of pipe
<u>Torque</u>		
Min. Make-up Torque :	14,940	ft.lbs
Opt. Make-up Torque :	16,600	ft.lbs
Max. Make-up Torque :	18,260	ft.lbs
Min. Shouldering Torque :	1,660	ft.lbs
Max. Shouldering Torque :	14,940	ft.lbs



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O.D. (inch)	Weight (lb/ft)	Wall Thickness (inch)	Grade	Special Drift D. (inch)	Connection
18.625	96.5	0.486	J55	17.500	NSMAX™-GR

### Grade - Material Property

Minimum Yield Strength :	55	ksi
Maximum Yield Strength :	80	ksi
Minimum Tensile Strength :	75	ksi

### Pipe Body Data (PE)

<u>Geometry</u>		
Nominal OD :	18.625	inch
Nominal ID :	17.653	inch
Nominal Cross section Area :	27.695	sqin.
Min. Wall Thickness :	92.5	%
<u>Property</u>		
Tensile Yield Strength :	1,523	klb
Compression Yield Strength :	1,523	klb
External (collapse) Pressure :	880	psi
Internal Yield Pressure :	2,660	psi

### Connection Data

<u>Geometry</u>		
Connection OD (nom) :	19.626	inch
Connection ID (nom) :	17.653	inch
Make-up Loss :	5.549	inch
Coupling Length :	12.280	inch
Critical Cross Section :	27.695	sqin.
<u>Efficiency</u>		
Tension Efficiency :	100	% of pipe
Compression Efficiency :	100	% of pipe
External Pressure Efficiency :	100	% of pipe
Internal Pressure Efficiency :	100	% of pipe
<u>Torque</u>		
Min. Make-up Torque :	15,570	ft.lbs
Opt. Make-up Torque :	17,300	ft.lbs
Max. Make-up Torque :	19,030	ft.lbs
Min. Shouldering Torque :	1,730	ft.lbs
Max. Shouldering Torque :	15,570	ft.lbs

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O.D. (inch)	Weight (lb/ft)	Wall Thickness (inch)	Grade	Special Drift D. (inch)	Connection
18.625	101.0	0.510	J55	17.500	NSMAX™-GR

### Grade - Material Property

Minimum Yield Strength :	55	ksi
Maximum Yield Strength :	80	ksi
Minimum Tensile Strength :	75	ksi

### Pipe Body Data (PE)

#### Geometry

Nominal OD :	18.625	inch
Nominal ID :	17.605	inch
Nominal Cross section Area :	29.024	sqin.
Min. Wall Thickness :	92.5	%

#### Property

Tensile Yield Strength :	1,596	klb
Compression Yield Strength :	1,596	klb
External (collapse) Pressure :	1,020	psi
Internal Yield Pressure :	2,790	psi

### Connection Data

#### Geometry

Connection OD (nom) :	19.626	inch
Connection ID (nom) :	17.605	inch
Make-up Loss :	5.549	inch
Coupling Length :	12.280	inch
Critical Cross Section :	29.024	sqin.

#### Efficiency

Tension Efficiency :	100	% of pipe
Compression Efficiency :	100	% of pipe
External Pressure Efficiency :	100	% of pipe
Internal Pressure Efficiency :	100	% of pipe

#### Torque

Min. Make-up Torque :	16,290	ft.lbs
Opt. Make-up Torque :	18,100	ft.lbs
Max. Make-up Torque :	19,910	ft.lbs
Min. Shouldering Torque :	1,810	ft.lbs
Max. Shouldering Torque :	16,290	ft.lbs

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O.D. (inch)	Weight (lb/ft)	Wall Thickness (inch)	Grade	Drift D. (inch)	Connection
18.625	106.0	0.531	J55	17.375	NSMAX™-GR

### Grade - Material Property

Minimum Yield Strength :	55	ksi
Maximum Yield Strength :	80	ksi
Minimum Tensile Strength :	75	ksi

### Pipe Body Data (PE)

<u>Geometry</u>		
Nominal OD :	18.625	inch
Nominal ID :	17.563	inch
Nominal Cross section Area :	30.184	sqin.
Min. Wall Thickness :	92.5	%
<u>Property</u>		
Tensile Yield Strength :	1,660	klb
Compression Yield Strength :	1,660	klb
External (collapse) Pressure :	1,140	psi
Internal Yield Pressure :	2,900	psi

### Connection Data

<u>Geometry</u>		
Connection OD (nom) :	19.626	inch
Connection ID (nom) :	17.563	inch
Make-up Loss :	5.549	inch
Coupling Length :	12.280	inch
Critical Cross Section :	30.184	sqin.
<u>Efficiency</u>		
Tension Efficiency :	100	% of pipe
Compression Efficiency :	100	% of pipe
External Pressure Efficiency :	100	% of pipe
Internal Pressure Efficiency :	100	% of pipe
<u>Torque</u>		
Min. Make-up Torque :	16,920	ft.lbs
Opt. Make-up Torque :	18,800	ft.lbs
Max. Make-up Torque :	20,680	ft.lbs
Min. Shouldering Torque :	1,880	ft.lbs
Max. Shouldering Torque :	16,920	ft.lbs

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O.D. (inch)	Weight (lb/ft)	Wall Thickness (inch)	Grade	Drift D. (inch)	Connection
18.625	109.4	0.563	J55	17.311	NSMAX™-GR

### Grade - Material Property

Minimum Yield Strength :	55	ksi
Maximum Yield Strength :	80	ksi
Minimum Tensile Strength :	75	ksi

### Pipe Body Data (PE)

<u>Geometry</u>		
Nominal OD :	18.625	inch
Nominal ID :	17.499	inch
Nominal Cross section Area :	31.947	sqin.
Min. Wall Thickness :	92.5	%
<u>Property</u>		
Tensile Yield Strength :	1,757	klb
Compression Yield Strength :	1,757	klb
External (collapse) Pressure :	1,330	psi
Internal Yield Pressure :	3,080	psi

### Connection Data

<u>Geometry</u>		
Connection OD (nom) :	19.626	inch
Connection ID (nom) :	17.499	inch
Make-up Loss :	5.549	inch
Coupling Length :	12.280	inch
Critical Cross Section :	31.947	sqin.
<u>Efficiency</u>		
Tension Efficiency :	100	% of pipe
Compression Efficiency :	100	% of pipe
External Pressure Efficiency :	100	% of pipe
Internal Pressure Efficiency :	100	% of pipe
<u>Torque</u>		
Min. Make-up Torque :	17,730	ft.lbs
Opt. Make-up Torque :	19,700	ft.lbs
Max. Make-up Torque :	21,670	ft.lbs
Min. Shouldering Torque :	1,970	ft.lbs
Max. Shouldering Torque :	17,730	ft.lbs

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O.D. (inch)	Weight (lb/ft)	Wall Thickness (inch)	Grade	Drift D. (inch)	Connection
18.625	112.0	0.579	J55	17.279	NSMAX™-GR

### Grade - Material Property

Minimum Yield Strength :	55	ksi
Maximum Yield Strength :	80	ksi
Minimum Tensile Strength :	75	ksi

### Pipe Body Data (PE)

#### Geometry

Nominal OD :	18.625	inch
Nominal ID :	17.467	inch
Nominal Cross section Area :	32.825	sqin.
Min. Wall Thickness :	92.5	%

#### Property

Tensile Yield Strength :	1,805	klb
Compression Yield Strength :	1,805	klb
External (collapse) Pressure :	1,420	psi
Internal Yield Pressure :	3,160	psi

### Connection Data

#### Geometry

Connection OD (nom) :	20.000	inch
Connection ID (nom) :	17.467	inch
Make-up Loss :	6.252	inch
Coupling Length :	13.685	inch
Critical Cross Section :	32.825	sqin.

#### Efficiency

Tension Efficiency :	100	% of pipe
Compression Efficiency :	100	% of pipe
External Pressure Efficiency :	100	% of pipe
Internal Pressure Efficiency :	100	% of pipe

#### Torque

Min. Make-up Torque :	22,950	ft.lbs
Opt. Make-up Torque :	25,500	ft.lbs
Max. Make-up Torque :	28,050	ft.lbs
Min. Shouldering Torque :	2,550	ft.lbs
Max. Shouldering Torque :	22,950	ft.lbs

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O.D. (inch)	Weight (lb/ft)	Wall Thickness (inch)	Grade	Drift D. (inch)	Connection
18.625	115.0	0.594	J55	17.249	NSMAX™-GR

### Grade - Material Property

Minimum Yield Strength :	55	ksi
Maximum Yield Strength :	80	ksi
Minimum Tensile Strength :	75	ksi

### Pipe Body Data (PE)

#### Geometry

Nominal OD :	18.625	inch
Nominal ID :	17.437	inch
Nominal Cross section Area :	33.648	sqin.
Min. Wall Thickness :	92.5	%

#### Property

Tensile Yield Strength :	1,851	klb
Compression Yield Strength :	1,851	klb
External (collapse) Pressure :	1,510	psi
Internal Yield Pressure :	3,250	psi

### Connection Data

#### Geometry

Connection OD (nom) :	20.000	inch
Connection ID (nom) :	17.437	inch
Make-up Loss :	6.252	inch
Coupling Length :	13.685	inch
Critical Cross Section :	33.648	sqin.

#### Efficiency

Tension Efficiency :	100	% of pipe
Compression Efficiency :	100	% of pipe
External Pressure Efficiency :	100	% of pipe
Internal Pressure Efficiency :	100	% of pipe

#### Torque

Min. Make-up Torque :	23,580	ft.lbs
Opt. Make-up Torque :	26,200	ft.lbs
Max. Make-up Torque :	28,820	ft.lbs
Min. Shouldering Torque :	2,620	ft.lbs
Max. Shouldering Torque :	23,580	ft.lbs

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O.D. (inch)	Weight (lb/ft)	Wall Thickness (inch)	Grade	Drift D. (inch)	Connection
18.625	122.0	0.636	J55	17.165	NSMAX™-GR

### Grade - Material Property

Minimum Yield Strength :	55	ksi
Maximum Yield Strength :	80	ksi
Minimum Tensile Strength :	75	ksi

### Pipe Body Data (PE)

<u>Geometry</u>		
Nominal OD :	18.625	inch
Nominal ID :	17.353	inch
Nominal Cross section Area :	35.943	sqin.
Min. Wall Thickness :	92.5	%
<u>Property</u>		
Tensile Yield Strength :	1,977	klb
Compression Yield Strength :	1,977	klb
External (collapse) Pressure :	1,760	psi
Internal Yield Pressure :	3,470	psi

### Connection Data

<u>Geometry</u>		
Connection OD (nom) :	20.000	inch
Connection ID (nom) :	17.353	inch
Make-up Loss :	6.252	inch
Coupling Length :	13.685	inch
Critical Cross Section :	35.943	sqin.
<u>Efficiency</u>		
Tension Efficiency :	100	% of pipe
Compression Efficiency :	100	% of pipe
External Pressure Efficiency :	100	% of pipe
Internal Pressure Efficiency :	100	% of pipe
<u>Torque</u>		
Min. Make-up Torque :	25,290	ft.lbs
Opt. Make-up Torque :	28,100	ft.lbs
Max. Make-up Torque :	30,910	ft.lbs
Min. Shouldering Torque :	2,810	ft.lbs
Max. Shouldering Torque :	25,290	ft.lbs

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O.D. (inch)	Weight (lb/ft)	Wall Thickness (inch)	Grade	Drift D. (inch)	Connection
18.625	136.0	0.693	J55	17.051	NSMAX™-GR

### Grade - Material Property

Minimum Yield Strength :	55	ksi
Maximum Yield Strength :	80	ksi
Minimum Tensile Strength :	75	ksi

### Pipe Body Data (PE)

<u>Geometry</u>		
Nominal OD :	18.625	inch
Nominal ID :	17.239	inch
Nominal Cross section Area :	39.040	sqin.
Min. Wall Thickness :	92.5	%
<u>Property</u>		
Tensile Yield Strength :	2,147	klb
Compression Yield Strength :	2,147	klb
External (collapse) Pressure :	2,090	psi
Internal Yield Pressure :	3,790	psi

### Connection Data

<u>Geometry</u>		
Connection OD (nom) :	20.000	inch
Connection ID (nom) :	17.239	inch
Make-up Loss :	6.252	inch
Coupling Length :	13.685	inch
Critical Cross Section :	39.040	sqin.
<u>Efficiency</u>		
Tension Efficiency :	100	% of pipe
Compression Efficiency :	100	% of pipe
External Pressure Efficiency :	100	% of pipe
Internal Pressure Efficiency :	100	% of pipe
<u>Torque</u>		
Min. Make-up Torque :	27,360	ft.lbs
Opt. Make-up Torque :	30,400	ft.lbs
Max. Make-up Torque :	33,440	ft.lbs
Min. Shouldering Torque :	3,040	ft.lbs
Max. Shouldering Torque :	27,360	ft.lbs



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O.D. (inch)	Weight (lb/ft)	Wall Thickness (inch)	Grade	Drift D. (inch)	Connection
20.000	94.0	0.438	J55	18.936	NSMAX™-GR

### Grade - Material Property

Minimum Yield Strength :	55	ksi
Maximum Yield Strength :	80	ksi
Minimum Tensile Strength :	75	ksi

### Pipe Body Data (PE)

<u>Geometry</u>		
Nominal OD :	20.000	inch
Nominal ID :	19.124	inch
Nominal Cross section Area :	26.918	sqin.
Min. Wall Thickness :	92.5	%
<u>Property</u>		
Tensile Yield Strength :	1,480	klb
Compression Yield Strength :	1,480	klb
External (collapse) Pressure :	520	psi
Internal Yield Pressure :	2,230	psi

### Connection Data

<u>Geometry</u>		
Connection OD (nom) :	21.000	inch
Connection ID (nom) :	19.124	inch
Make-up Loss :	5.661	inch
Coupling Length :	12.504	inch
Critical Cross Section :	26.918	sqin.
<u>Efficiency</u>		
Tension Efficiency :	100	% of pipe
Compression Efficiency :	100	% of pipe
External Pressure Efficiency :	100	% of pipe
Internal Pressure Efficiency :	100	% of pipe
<u>Torque</u>		
Min. Make-up Torque :	15,750	ft.lbs
Opt. Make-up Torque :	17,500	ft.lbs
Max. Make-up Torque :	19,250	ft.lbs
Min. Shouldering Torque :	1,750	ft.lbs
Max. Shouldering Torque :	15,750	ft.lbs

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O.D. (inch)	Weight (lb/ft)	Wall Thickness (inch)	Grade	Drift D. (inch)	Connection
20.000	106.5	0.500	J55	18.812	NSMAX™-GR

### Grade - Material Property

Minimum Yield Strength :	55	ksi
Maximum Yield Strength :	80	ksi
Minimum Tensile Strength :	75	ksi

### Pipe Body Data (PE)

<u>Geometry</u>		
Nominal OD :	20.000	inch
Nominal ID :	19.000	inch
Nominal Cross section Area :	30.631	sqin.
Min. Wall Thickness :	92.5	%
<u>Property</u>		
Tensile Yield Strength :	1,685	klb
Compression Yield Strength :	1,685	klb
External (collapse) Pressure :	770	psi
Internal Yield Pressure :	2,540	psi

### Connection Data

<u>Geometry</u>		
Connection OD (nom) :	21.000	inch
Connection ID (nom) :	19.000	inch
Make-up Loss :	5.596	inch
Coupling Length :	12.374	inch
Critical Cross Section :	30.631	sqin.
<u>Efficiency</u>		
Tension Efficiency :	100	% of pipe
Compression Efficiency :	100	% of pipe
External Pressure Efficiency :	100	% of pipe
Internal Pressure Efficiency :	100	% of pipe
<u>Torque</u>		
Min. Make-up Torque :	16,650	ft.lbs
Opt. Make-up Torque :	18,500	ft.lbs
Max. Make-up Torque :	20,350	ft.lbs
Min. Shouldering Torque :	1,850	ft.lbs
Max. Shouldering Torque :	16,650	ft.lbs

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O.D. (inch)	Weight (lb/ft)	Wall Thickness (inch)	Grade	Drift D. (inch)	Connection
20.000	117.0	0.563	J55	18.686	NSMAX™-GR

### Grade - Material Property

Minimum Yield Strength :	55	ksi
Maximum Yield Strength :	80	ksi
Minimum Tensile Strength :	75	ksi

### Pipe Body Data (PE)

<u>Geometry</u>		
Nominal OD :	20.000	inch
Nominal ID :	18.874	inch
Nominal Cross section Area :	34.379	sqin.
Min. Wall Thickness :	92.5	%
<u>Property</u>		
Tensile Yield Strength :	1,891	klb
Compression Yield Strength :	1,891	klb
External (collapse) Pressure :	1,100	psi
Internal Yield Pressure :	2,860	psi

### Connection Data

<u>Geometry</u>		
Connection OD (nom) :	21.000	inch
Connection ID (nom) :	18.874	inch
Make-up Loss :	5.596	inch
Coupling Length :	12.374	inch
Critical Cross Section :	34.379	sqin.
<u>Efficiency</u>		
Tension Efficiency :	100	% of pipe
Compression Efficiency :	100	% of pipe
External Pressure Efficiency :	100	% of pipe
Internal Pressure Efficiency :	100	% of pipe
<u>Torque</u>		
Min. Make-up Torque :	18,540	ft.lbs
Opt. Make-up Torque :	20,600	ft.lbs
Max. Make-up Torque :	22,660	ft.lbs
Min. Shouldering Torque :	2,060	ft.lbs
Max. Shouldering Torque :	18,540	ft.lbs

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O.D. (inch)	Weight (lb/ft)	Wall Thickness (inch)	Grade	Drift D. (inch)	Connection
20.000	133.0	0.635	J55	18.542	NSMAX™-GR

### Grade - Material Property

Minimum Yield Strength :	55	ksi
Maximum Yield Strength :	80	ksi
Minimum Tensile Strength :	75	ksi

### Pipe Body Data (PE)

<u>Geometry</u>		
Nominal OD :	20.000	inch
Nominal ID :	18.730	inch
Nominal Cross section Area :	38.631	sqin.
Min. Wall Thickness :	92.5	%
<u>Property</u>		
Tensile Yield Strength :	2,125	klb
Compression Yield Strength :	2,125	klb
External (collapse) Pressure :	1,500	psi
Internal Yield Pressure :	3,230	psi

### Connection Data

<u>Geometry</u>		
Connection OD (nom) :	21.063	inch
Connection ID (nom) :	18.730	inch
Make-up Loss :	6.315	inch
Coupling Length :	13.811	inch
Critical Cross Section :	38.631	sqin.
<u>Efficiency</u>		
Tension Efficiency :	100	% of pipe
Compression Efficiency :	100	% of pipe
External Pressure Efficiency :	100	% of pipe
Internal Pressure Efficiency :	100	% of pipe
<u>Torque</u>		
Min. Make-up Torque :	26,370	ft.lbs
Opt. Make-up Torque :	29,300	ft.lbs
Max. Make-up Torque :	32,230	ft.lbs
Min. Shouldering Torque :	2,930	ft.lbs
Max. Shouldering Torque :	26,370	ft.lbs

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O.D. (inch)	Weight (lb/ft)	Wall Thickness (inch)	Grade	Special Drift D. (inch)	Connection
20.000	144.0	0.693	J55	18.500	NSMAX™-GR

### Grade - Material Property

Minimum Yield Strength :	55	ksi
Maximum Yield Strength :	80	ksi
Minimum Tensile Strength :	75	ksi

### Pipe Body Data (PE)

<u>Geometry</u>		
Nominal OD :	20.000	inch
Nominal ID :	18.614	inch
Nominal Cross section Area :	42.034	sqin.
Min. Wall Thickness :	92.5	%
<u>Property</u>		
Tensile Yield Strength :	2,312	klb
Compression Yield Strength :	2,312	klb
External (collapse) Pressure :	1,810	psi
Internal Yield Pressure :	3,530	psi

### Connection Data

<u>Geometry</u>		
Connection OD (nom) :	21.063	inch
Connection ID (nom) :	18.614	inch
Make-up Loss :	6.315	inch
Coupling Length :	13.811	inch
Critical Cross Section :	42.034	sqin.
<u>Efficiency</u>		
Tension Efficiency :	100	% of pipe
Compression Efficiency :	100	% of pipe
External Pressure Efficiency :	100	% of pipe
Internal Pressure Efficiency :	100	% of pipe
<u>Torque</u>		
Min. Make-up Torque :	28,440	ft.lbs
Opt. Make-up Torque :	31,600	ft.lbs
Max. Make-up Torque :	34,760	ft.lbs
Min. Shouldering Torque :	3,160	ft.lbs
Max. Shouldering Torque :	28,440	ft.lbs