



**COMPASS**  
INTERNATIONAL INC.



**2021**

**Pipelines, Mining &  
Offshore Cost Data  
Yearbook**

**10<sup>TH</sup> EDITION**



# 1

## SECTION 1:

- 1** Introduction, General Comments and Calibration Factors:  
includes the following:  
Location (Calibration) Factors - International values compared to USA Gulf Coast. (Base of 1.00). Calibrations in this application are used to adjust the benchmark prices depicted in the following SECTIONS (1 thru 700).  
25 # Country Calibration Factors.  
General Conversion Values - Imperial to Metric Units.  
Import Duties General Sales Tax / Value. Added Tax / Consumption Tax.  
Detailed Design / Engineering / Architectural and CM Fees 51 # Facility Types.  
Union Labor Costs / Inflation Cost Indexes.  
USA and Canada State & Province Sales Tax / GST.

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## SECTION 10:

- 17** Major Equipment / Production Equipment

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**Table 6**  
**PILES / CAISSONS**

SIZE / DIAMETER	\$ COST MINIMUM PER LF	\$ COST MAXIMUM PER SF	\$ COST MINIMUM PER M	\$ COST MAXIMUM PER M
<b>STEEL H SECTION</b>				
10" X 10"	51.06	62.61	167.48	205.37
12" X 12"	70.98	87.05	232.83	285.51
14" X 14"	95.89	117.60	314.52	385.73
<b>PRE-STRESSED CONCRETE PILES</b>				
14"	33.30	40.54	109.21	132.98
16"	48.72	59.32	159.80	194.55
18"	63.33	77.11	207.73	252.92
<b>CONCRETE FILLED ROUND STEEL PILES</b>				
10"	31.57	38.44	103.55	126.09
12"	35.59	43.35	116.72	142.18
14"	40.41	49.23	132.55	161.48
16"	48.09	58.57	157.73	192.11
18"	60.47	73.65	198.34	241.56
<b>CAISSONS</b>				
18"	12.42	16.56	40.75	54.30
24"	19.88	24.44	65.20	80.17
30"	32.29	39.73	105.92	130.32
36"	57.14	70.29	187.42	230.54
<b>RAIL TRACK</b>		<b>\$ COST MAXIMUM PER LF</b>		
Rail Track standard width 4' 8-1/2" c/w ballast / sleepers & rails	190.76	231.90	625.70	760.64

**Table 7**  
**INSTALLATION MAN HOURS**

EXCAVATION	UNIT	MIN. MAN-HOURS	MAX. MAN-HOURS
Cut & chip trees up to 6" diameter	Acre	10.00	20.00
Cut & chip trees between 6" & 12" diameter	Acre	12.00	24.00
Cut & chip trees between 12" & 18" diameter	Acre	14.00	28.00
Cut & chip trees between 18" & 24" diameter	Acre	16.00	32.00
Cut & chip trees between 24" & 36" diameter	Acre	18.00	36.00
Grub up and remove tree stumps up to 6" diameter	Each	4.00	6.00
Ditto between 6" & 12" diameter	Each	6.00	8.00
Ditto between 12" & 18" diameter	Each	8.00	10.00
Ditto between 18" & 24" diameter	Each	10.00	12.00
Excavate continuous foundations n/e 5' deep w. 0.5 CY backhoe / bucket	CY	0.55	0.75
Excavate continuous foundations n/e 10' deep w. 0.75 CY backhoe / bucket	CY	0.60	0.70
Excavate continuous foundations n/e 15' deep w. 1.00 CY backhoe / bucket	CY	0.45	0.55

**OSBL PIPING 10" DIAMETER A 53 CS SCH 40**

**Union Installation**

- \$ Cost per LF \$240
- \$ Cost per M \$785
- For height 12' - 25' Add between 2.5% and 5% to Labor and Construction Equipment
- For height 25' - 50' Add between 5% and 8% to Labor and Construction Equipment
- For height 50' - 100' Add between 8% and 15% to Labor and Construction Equipment

**ISBL PIPING 12" DIAMETER A 53 CS SCH 40**

**Union Installation**

- \$ Cost per LF \$490
- \$ Cost per M \$1,604
- For height 12' - 25' Add between 2.5% and 5% to Labor and Construction Equipment
- For height 25' - 50' Add between 5% and 8% to Labor and Construction Equipment
- For height 50' - 100' Add between 8% and 15% to Labor and Construction Equipment

**OSBL PIPING 12" DIAMETER A 53 CS SCH 40**

**Union Installation**

- \$ Cost per LF \$297
- \$ Cost per M \$974
- For height 12' - 25' Add between 2.5% and 5% to Labor and Construction Equipment
- For height 25' - 50' Add between 5% and 8% to Labor and Construction Equipment
- For height 50' - 100' Add between 8% and 15% to Labor and Construction Equipment

**ISBL PIPING 18" DIAMETER A 53 CS SCH 40**

**Union Installation**

- \$ Cost per LF \$748
- \$ Cost per M \$2,452
- For height 12' - 25' Add between 2.5% and 5% to Labor and Construction Equipment
- For height 25' - 50' Add between 5% and 8% to Labor and Construction Equipment
- For height 50' - 100' Add between 8% and 15% to Labor and Construction Equipment

**OSBL PIPING 18" DIAMETER A 53 CS**

**Union Installation**

- \$ Cost per LF \$467
- \$ Cost per M \$1,532
- For height 12' - 25' Add between 2.5% and 5% to Labor and Construction Equipment
- For height 25' - 50' Add between 5% and 8% to Labor and Construction Equipment
- For height 50' - 100' Add between 8% and 15% to Labor and Construction Equipment

**ISBL PIPING 24" DIAMETER A 53 CS**

**Union Installation**

- \$ Cost per LF \$1,050
- \$ Cost per M \$3,443
- For height 12' - 25' Add between 2.5% and 5% to Labor and Construction Equipment
- For height 25' - 50' Add between 5% and 8% to Labor and Construction Equipment
- For height 50' - 100' Add between 8% and 15% to Labor and Construction Equipment

**OSBL PIPING 24" DIAMETER A 53 CS**

**Union Installation**

- \$ Cost per LF \$645
- \$ Cost per M \$2,115
- For height 12' - 25' Add between 2.5% and 5% to Labor and Construction Equipment
- For height 25' - 50' Add between 5% and 8% to Labor and Construction Equipment
- For height 50' - 100' Add between 8% and 15% to Labor and Construction Equipment

**ISBL PIPING 2" DIAMETER CS TEFLON LINED**

**Union Installation**

- \$ Cost per LF \$328
- \$ Cost per M \$1,077
- For height 12' - 25' Add between 2.5% and 5% to Labor and Construction Equipment
- For height 25' - 50' Add between 5% and 8% to Labor and Construction Equipment
- For height 50' - 100' Add between 8% and 15% to Labor and Construction Equipment

#	CONSTRUCTION EQUIPMENT / PLANT HIRE (EXCLUDES FUELING & MAINTENANCE)	UNIT		\$ COST
<b>CONTINUED</b>				
38	Asphalt kettle / seal coater for road work, 250 gallon, propane, towed unit.	HOUR	Excl Oper	12.67
39	Asphalt truck spreader / profiler, 500 ton, 12' wide 4"-10" application	HOUR	Excl Oper	234.48
40	Auger horizontal 10" - 24" dia 35 HP gasoline	HOUR	Excl Oper	27.64
41	Auger horizontal 18" - 30" dia 50 HP gasoline	HOUR	Excl Oper	38.50
42	Auger vertical drill, 6" - 8" diameter, n/e 200' total depth	HOUR	Excl Oper	69.81
43	Backhoe / JCB 0.50 CY	HOUR	Excl Oper	108.19
44	Backhoe / JCB 1 CY	HOUR	Excl Oper	167.86
45	Backhoe Kubota 20 HP	HOUR	Excl Oper	30.35
46	Barge 250 Ton & 100 HP 3 man pusher boat	HOUR	Excl Oper	83.66
47	Barge 500 Ton ditto	HOUR	Excl Oper	97.78
48	Belt stone / soil loader, 20' x 48" wide 2 - 1 slope, gasoline	HOUR	Excl Oper	15.04
49	Belt stone / soil loader, 36' x 24" wide 2 - 1 slope 300 TPH, gasoline	HOUR	Excl Oper	16.88
50	Belt loader bin feeder / hopper 25 Ton	HOUR	Excl Oper	7.37
51	Block, snatch and chain come along 25 Ton	HOUR	Excl Oper	8.41
52	Bobcat F E loader 35 HP	HOUR	Excl Oper	30.35
53	Brush / tree chipper, up to 6" diameter tree, towed unit, gasoline powered	HOUR	Excl Oper	28.21
54	Bulldozer 80 HP	HOUR	Excl Oper	101.79
55	Bulldozer 150 HP	HOUR	Excl Oper	227.06
56	Bulldozer 350 HP	HOUR	Excl Oper	378.19
57	Centrifugal pump 2", 150 GPM with discharge hose, gasoline / 2-stroke	HOUR	Excl Oper	11.11
58	Centrifugal pump 4", 250 GPM with discharge hose, gasoline	HOUR	Excl Oper	16.28
59	Centrifugal pump 6", 350 GPM with discharge hose, gasoline	HOUR	Excl Oper	20.12
60	Chain trencher 2" - 3" wide to a depth of 3', 15 HP gasoline	HOUR	Excl Oper	12.10
61	Chain trencher 4" - 6" wide to a depth of 4' 25 HP gasoline	HOUR	Excl Oper	22.92
62	Chain trencher 6" - 9" wide to a depth of 6' 35 HP gasoline	HOUR	Excl Oper	44.46
63	Chainsaw 18" gasoline / 2 - stroke	HOUR	Excl Oper	8.75
64	Chainsaw 30" gasoline / 2 - stroke	HOUR	Excl Oper	11.46
65	Mulch / Seed / Chip spreader 84" wide, motorized, gasoline	HOUR	Excl Oper	34.86
66	Mulch / Seed / Chip spreader 84" wide, towed unit	HOUR	Excl Oper	2.90
67	Chain rigging hoist 5 ton c/w 20' cables	HOUR	Excl Oper	6.56
68	Chain rigging hoist 20 ton c/w 20' cables	HOUR	Excl Oper	11.97
69	Compactor / rammer / jumper, 18" x 18", gasoline / 2 - stroke	HOUR	Excl Oper	3.48
70	Concrete Ready - Mix truck 8 CY	HOUR	Excl Oper	88.72
71	Concrete Ready - Mix truck 10 CY	HOUR	Excl Oper	101.66
72	Concrete Ready - Mix truck 12 CY	HOUR	Excl Oper	114.60
73	Concrete Ready - Mix truck 14 CY	HOUR	Excl Oper	127.54
74	Concrete delivery bucket 0.50 CY	HOUR	Excl Oper	4.19
75	Concrete delivery bucket 1 CY	HOUR	Excl Oper	4.73
76	Concrete delivery bucket 1.50 CY	HOUR	Excl Oper	5.11
77	Concrete delivery bucket 2.50 CY	HOUR	Excl Oper	7.41
78	Concrete conveyor rubber belt, 16" wide x 36' long, gasoline	HOUR	Excl Oper	121.07
79	Concrete conveyor rubber belt, 18" wide x 42' long, gasoline	HOUR	Excl Oper	134.01
80	Concrete finisher 42" 3 blade gasoline / 2 - stroke	HOUR	Excl Oper	4.98
81	Concrete grinder 24" dia 5 HP gasoline / 2 - stroke	HOUR	Excl Oper	11.19
82	Concrete / mortar mixer, 5 CF, 5 HP gasoline / 2 - stroke	HOUR	Excl Oper	12.37

## Pipeline Installation Crew (USA AND CANADA) (2020 BASIS)

#	SKILL	NO. REQUIRED	\$ COST PER HOUR	\$ TOTAL COST FOR 8.5 HOUR DAY
1	Superintendent / Senior Forman includes \$90 per day per diem	1	\$140	\$1,190
2	Forman / Charge Hand includes \$70 per day per diem	1	125	\$1,063
3	Machine Operators includes \$70 per day per diem	2	105	\$1,785
4	Truck Driver includes \$70 per day per diem	1	105	\$893
5	Welder includes \$70 per day per diem	5	105	\$4,463
6	Welder Helper	5	85	\$3,613
<b>TOTAL CREW COST PER DAY</b>				<b>13,005</b>
<b>NOTES</b>				
<ul style="list-style-type: none"> <li>• Camp costs in USA / Canada range between \$50 - \$100 per day for each worker:</li> <li>• 3 man survey crew \$12,500 - \$15,000 per week</li> </ul>				

## Pipeline Construction Equipment Rates

(RATES INCLUDE FUEL, MAINTENANCE, OVERHEAD & PROFIT IS EXCLUDED, ALSO EXCLUDES OPERATORS)

#	CONSTRUCTION EQUIPMENT DESCRIPTION	\$ HOURLY BILL OUT RATE
1	1 Ton Crew Cab Truck	38.28
2	1 Ton Winch Truck	34.97
3	2.5 Ton Winch Truck	45.34
4	10 Ton Boom Truck / Picker	62.83
5	15 Ton Boom Truck / Picker	70.47
6	20 Ton Boom Truck / Picker	81.20
7	25 Ton Boom Truck / Picker	94.53
8	D8 Dozer / Side boom (Low Ground Pressure)	107.83
9	D7 Dozer / Side boom (Low Ground Pressure)	97.12
10	D6 Dozer (Low Ground Pressure)	82.22
11	D5 Dozer (Low Ground Pressure)	77.79
12	D4 Dozer (Low Ground Pressure)	64.59
13	2CX JCB 75 HP Backhoe 12' dig depth c/w 0.5 CY Front Loader	53.65
14	DX140 Doosan Backhoe 18' dig depth 30" bucket	49.59
15	Cat 8000 Dragline 30 CY bucket 250' boom	583.28
16	Cat 320CL 36" bucket 25' dig depth	104.61
17	FMC / Link-Belt 35-Ton Drag-Line Crane HC-78B, c/w 55' Lattice- Boom 1 CY bucket	57.44
18	Cat 215 Backhoe c/w hydraulic drill attachment	88.98
19	7,500 Cat Foot Pound Hammer	137.66
20	Grove Rough Terrain 528 C 15 Ton Crane	94.24
21	Cat SP/CPX-583 Side boom Pipe layer 333 HP	104.83
22	Cat 587R Side boom Pipe layer 350 HP	115.21
23	John Deere 540B Grapple / tractor	47.40



## USA Mid-West Pipeline

27 MILE 12 " / 18" DIA PIPELINE MID-WEST USA 16 MILES 12" DIA - 11 MILES 18" DIA.  
2019 COST BASIS:

#	DESCRIPTION	\$ COST	COMMENTS
1	ROW (Clearing)	687,970	
2	Material (Pipe / Stone / Concrete)	4,178,670	
3	Construction (Labor)	3,295,760	
4	Construction (Construction Equipment)	3,015,761	
5	Construction (General Conditions)	654,334	
6	Supervision / Construction Mgmt	945,500	
7	Road Crossing (3)	93,667	3 #
8	Railroad crossing (1)	76,665	1 #
9	Engineering	1,314,600	12,700 hours
10	Freight	614,660	
11	Inspection	605,000	6,250 hours
13	<b>TOTAL COST</b>	<b>15,482,587</b>	
12	<b>COST PER MILE</b>	<b>573,429</b>	
13	<b>TYPICAL COST RANGE PER MILE (LOW) - 15%</b>	<b>487,500</b>	
14	<b>TYPICAL COST RANGE PER MILE (HIGH) + 15%</b>	<b>659,500</b>	

## West VA to PA, USA 2020 Cost Model

48.6 MILES 18" & 20 "DIA , GAS OVERLAND PIPELINE: AVERAGE 5' BURIED PIPELINE  
18" DIAMETER 43.8 MILES WITH 4.8 MILES 20" DIAMETER

#	DESCRIPTION	\$ MILLIONS	%
1	Site Offices / Laydown Area / Supervision (2 Locations)	1.21	1.2%
2	ROW / Survey / Clearing / Excavation / Backfill / Road Repairs / Demolition	7.87	8.0%
3	Materials (Pipe / Stone / Concrete / Wrapping / Thrust Blocks)	18.02	18.2%
4	Valves, Fittings, Manifold & Sleeves	2.96	3.0%
5	Slurry Wall / Overhead Section	2.66	2.7%
6	Installation Labor (Average \$72 hour)	29.03	29.3%
7	Construction Equipment	8.55	8.6%
8	River Crossing including barge work	3.77	3.8%
9	Road / Railroad Crossings (10) / Traffic Control	2.9	2.9%
10	Compressor Pumping Stations (3) 2,000, 2,500 & 3,500 HP	8.32	8.4%
11	Miscellaneous Items / SCADA / Communications / Control - Admin Building / Fencing / Security CCTV	13.62	13.8%
12	<b>S/T</b>	<b>98.91</b>	<b>100.0%</b>
13	Detailed Design / Project Mgmt - Control / Procurement Activities	8.23	8.3%
14	Construction Management / Inspection	4.15	4.2%
15	Fees / Profit / Permits	3.73	3.8%
16	<b>TOTAL COST</b>	<b>115.02</b>	
17	<b>COST PER MILE</b>	<b>2.37</b>	
18	<b>TYPICAL RANGE (LOW)</b>	<b>1.89</b>	
19	<b>TYPICAL RANGE (HIGH)</b>	<b>2.84</b>	