SEGMENTABLE ELBOWS

FIELD SEGMENTATION

The construction of pipelines often require abrupt directional changes due to topographic conditions in hilly terrain or populated areas. In addition to that, repairs where an elbow must be fit to the existing pipeline segment in the shortest time possible are daily business. Thus, field segmentation of elbows is often necessary and part of normal field construction practice.

SEGMENTABLE ELBOWS/BENDS: COMMON STANDARDS

In the case of typical segmentable elbows, common standards (e.g. MSS SP-75) refer to limitations regarding the out of roundness of an elbow with 1 % measured on the outside diameter. However, these limitations do not take into account the tolerances of the nominal inside diameter of the pipes and the fittings. According to ASME B31.8 (2016) a maximum misalignment of 3/32" (2.38 mm) between the pipe and the elbows is allowed if a pipe line construction without back welding is desired. Thus, this threshold value is determining the use of pups (small adapter pipes) which are usually used to enable back welding from the pipe interior (see Fig. 1).

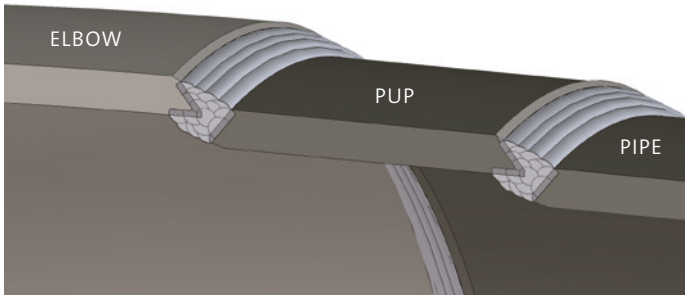

Figure 1: Common practice for adjusting the misalignment between the root face of the pipes and the elbows using pups (small adapter pipes) which enable back welding.

SEGMENTABLE ELBOWS: ERNE FITTINGS STANDARDS

Using a new high-precision mandrel forming method, Erne Fittings provides elbows, guaranteeing optimum nominal inside diameters together with tightest tolerances throughout the whole body of the elbow after cutting with conventional methods in the field. This enables the field segmentation of elbows during the installation of pipelines with minimum misalignment between pipe and elbow and thus, a convenient way to carry out all welding operations without any adjustments of the bevel ends prior to welding. Moreover, the use of pups is not necessary, since the root layer can be welded in high quality from outside only (Fig. 2).

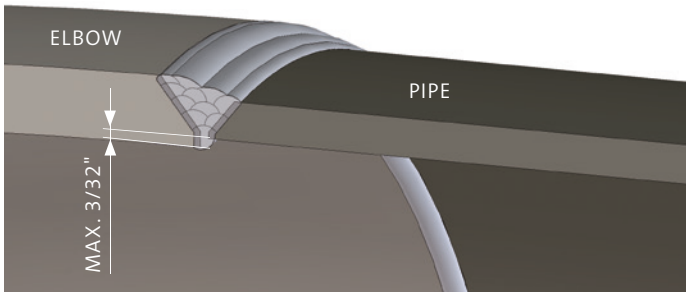

Figure 2: Minimum misalignment < 3/32" (2.38 mm) using Erne Fittings high-precision segmentable elbows enabling pipe line production without back welding operations.

OPTIONS

- Dimensions: 2" – 42" / 60 mm – 1067 mm; LR; R = 3D; R = 5D; STD + XS + 0.625" + 0.750" + 1.000"
- Input materials: seamless or longitudinally welded pipes
- Materials: WPB, WPL6, WPHY-42 – WPHY-70, CSA Grade 241 – Grade 483

AVAILABLE FROM STOCK; STD + XS + 0.625" + 0.750" + 1.000"

	Material	Standard	2" 60	3" 89	4" 114	6" 168	8" 219	10" 273	12" 324	14" 355	16" 408	18" 457	20" 508	24" 610	30" 762	36" 914	42" 1067	
	WPB	ASME B 16.9																LR/R=3D
	WPL6	ASME B 16.9																LR/R=3D
	WPHY-42	MSS SP-75																LR/R=3D
	WPHY-52	MSS SP-75																LR/R=3D
	WPHY-60	MSS SP-75																LR/R=3D
	WPHY-65	MSS SP-75																LR/R=3D
	WPHY-70	MSS SP-75																LR/R=3D

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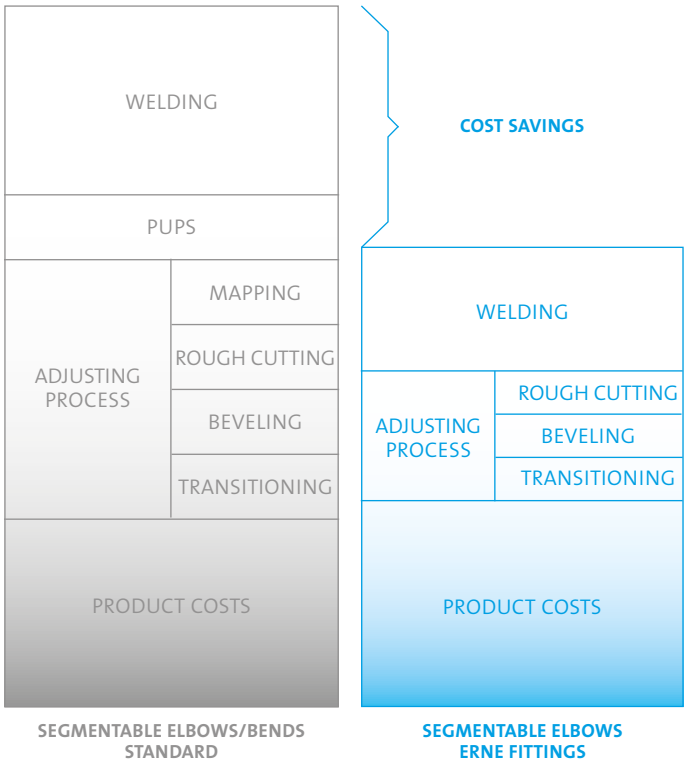
HOW TO SAVE COSTS

With its segmentable elbows, Erne Fittings offers tremendously cost-saving products as a real innovation in field segmentation.

Cut costs through the reduction of

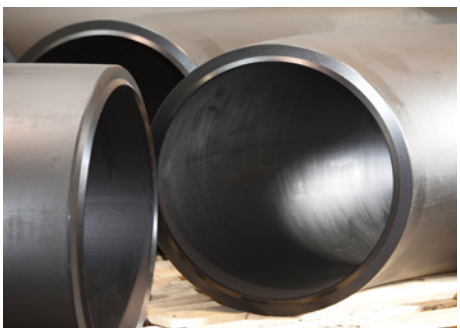
> Pups for the adjustment of the misalignment between the root faces of the pipes and elbows
> The number of circumferential welds due to the elimination of pups
> Inconvenient and very time consuming back welding operations
> Time for adjustments prior to welding

All this increases the efficiency during pipeline construction and substantially reduces construction time and costs.



TECHNICAL DELIVERY CONDITIONS

> Standards: ASTM A234 / ASME SA-234, ASTM A420 / ASME SA-420, MSS SP-75, ASTM A860, CSA Z245.11
> Special dimensional requirements throughout the body of the elbows in order to achieve maximum 1 % deviation of diameters after cutting of elbows
> Material Test Certificate according to EN 10204/3.1



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