

## **Pilgering, Semi-solid forming, SPD**

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## 1. Quiz – Key

1. What is pilger rolling?

Reducing the thickness of tubes produced by Mannesmann process – using a pair of grooved rolls and mandrel.

2. Mention some merits of semi-solid forming.

Lower shrinkage, no porosity, improved die life, forming intricate shapes possible.

3. If nano grain sizes are to be achieved, what forming processes are suitable?

Severe plastic deformation such as equal channel angular processing, high pressure torsion can be used.

4. Why is the microstructure obtained in high pressure torsion process heterogeneous?

Due to variation in shear strain between center and surface.