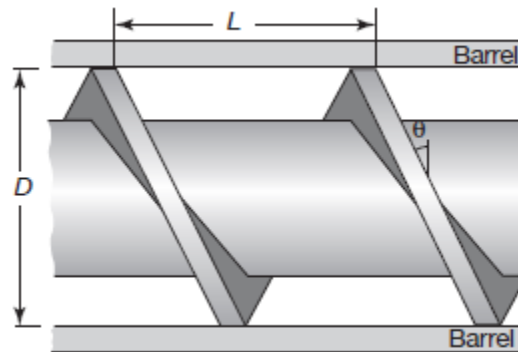


- 1- Can polymers be used to conduct electricity? Explain, giving several examples.
- 2- Why is there so much variation in the stiffness of products made of polymers? Explain
- 3- Describe the methods by which the optical properties of polymers can be altered?
- 4- How can you tell whether a part is made of a thermoplastic or a thermoset?
- 5- What are the materials that the dentists are using for filling the cavities in the teeth? Explain how they cure?
- 6- Give several examples of plastic products or components for which creep and stress relaxation are important considerations.
- 7- What flight angle should be used on a screw so that a flight translates a distance equal to the barrel diameter with every revolution? Refer to the following figure.



- 8- An extruder has a barrel diameter of 100 mm. The screw rotates at 100 rpm, has a channel depth of 6 mm, and a flight angle of 17.5° . What is the highest flow rate of polypropylene that can be achieved?
- 9- The extruder in previous question has a pumping section that is 2.5 m long and is used to extrude round polyethylene solid rod. The die has a land of 1 mm and a diameter of 5 mm. If the polyethylene is at a mean temperature of 250 degree C, what is the flow rate through the die? What if the die diameter is 10 mm? you can use tables of the book to find viscosity of materials.
- 10- Estimate the die-clamping force required for injection molding five identical 200-mm-diameter disks in one die. Include the runners of appropriate length and diameter. The injection pressure is 14.5 KSI.
- 11- What is the difference between injection molding and extrusion?

12- What are the benefits of using Toggle clamp in injection molding instead of hydraulic clamping?

13- What is pultrusion? Pulforming?

14- What are the advantages of coextrusion?

15- What is the manufacturing process to make eye contact lenses? Explain in detail.

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