How are Glass Fibers Made?

• Both, continuous and staple forms of glass fibers are produced by partially similar method.

• Process of producing continuous fibers:
  – Raw materials (sand, limestone, alumina) are mixed and melted in a furnace at approximately 1260 C.
  – Molten glass then:
    • Either flows directly into a fiber-drawing facility. This process is known as “direct-melt” process. Most of fiber glass in the world is produced this way.
    • Or gets formed into marbles. These marbles are later fused, and drawn into fibers.

• For producing continuous fibers, molten glass passes through multiple holes to form fibers. These fibers are quenched through a light spray of water. Subsequently, fibers are coated with protective and lubricating agents.
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• Next fibers are collected in bundles known as “strands”. Each strand may have typically 204 individual fibers.

• Next, strands wound on spools. Fibers in these spools are subsequently processed further to produce textiles.

• *Staple fibers* are produced by pushing high pressure air-jet across fibers, as they emanate from holes during the drawing process.

• These fibers, are subsequently collected, sprayed with a binder, and collected into bundles known as “slivers”.

• These slivers may subsequently be drawn and twisted into yarns.