

Firezone Fumetight Seal

Patent #8,225,553

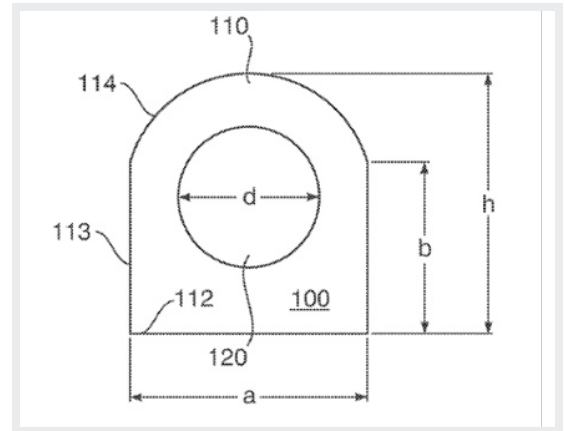
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Patent Overview

Firezone Fumetight Seal – Patent # 8,225,553



Key Features

- The invention is a fumetight gasket capable of fireproofing/sealing a doorway in the event of a fire.
- Current gaskets tend to be very rigid and difficult to install due to irregularities that exist in the bulkhead in which the frame is installed.
- The gasket comprises an elongated member having a substantially D-shaped cross section for mounting to a substantially U-shaped gasket retainer in a door frame.
 - The elongated member has a substantially D-shaped outer core that of silicone rubber.
- The fumetight gasket also includes an inner core within the substantially D-shaped outer core.
 - The inner core comprises an intumescent material for filling doorway voids during fires when the inner core is exposed by the deterioration of the outer core.

Technical Information

- Dimensions of the fumetight gasket
 - Height from the flat back side to the top of the front side is approximately 0.75 inches long
 - The side portions are approximately 0.50 inches long
 - The inner core has a diameter of approximately 0.5 inches long
- Material Selection
 - Inner core comprises a material selected from the group comprising graphite, mica, perlite, vermiculite, hydrated sodium silicate, phosphorus, and combinations thereof to allow for up to 400% expansion of the intumescent material if the intumescent material is exposed when the silicone rubber outer core deteriorates due to fire exposure.

Potential Markets

This section provides insights into market size, trends, and barriers to entry for the commercial applications of the technology, as well as recommendations for deeper market research. Potential markets include use in Commercial Buildings, Ship Manufacturing, and Nuclear Power industries.

Potential Markets

Market Insights

Commercial Buildings

Large-scale buildings or factories that must meet certain safety codes.

Market Size/Trends

- The US Commercial Construction market is estimated to grow at a CAGR of 1.62% to reach US \$107 billion by 2027.
- Factors influencing growth include an increase in the construction of green buildings, expanding manufacturing and distribution facilities in the US, and the booming domestic real estate sector.
- Smart cities is an emerging trend in the market.

Barriers to Entry – High

- Lack of workforce in construction industry may impede market growth.

Ship Manufacturers

The construction of ships and other floating vessels.

Market Size/Trends

- The global Shipbuilding market size was valued at \$142 billion in 2020 and is expected to expand at a CAGR of just over 3% until 2030 to reach \$195 billion.
- This growth is mainly due to increased maritime shipping volume as a result of international trade agreements, gross domestic product (GDP), increased demand for cargo transportation via ships, and enhanced automation in marine transport.

Barriers to Entry – High

- The shipbuilding market is consolidated, with several players accounting for significant amounts of market share.
- Fluctuations in transportation and inventory costs could hamper industry growth.

Nuclear Power

Applications include cooling pipes, or any high-pressure pipes used with nuclear facilities.

Market Size/Trends

- The global Nuclear Power Plant and Equipment market was valued at \$41.1 billion in 2020 and is projected to reach \$58.4 billion by 2030 (a CAGR of 3.5% from 2021 to 2030).
- Nation-states seek clean, efficient ways to produce energy.
- The persistent challenges associated with nuclear waste management have restrained market growth.

Barriers to Entry – High

- The extraordinarily high capital costs involved in building nuclear power plants create tremendous economic barriers for entry.

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