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Brief 71-10336

NASA TECH BRIEF

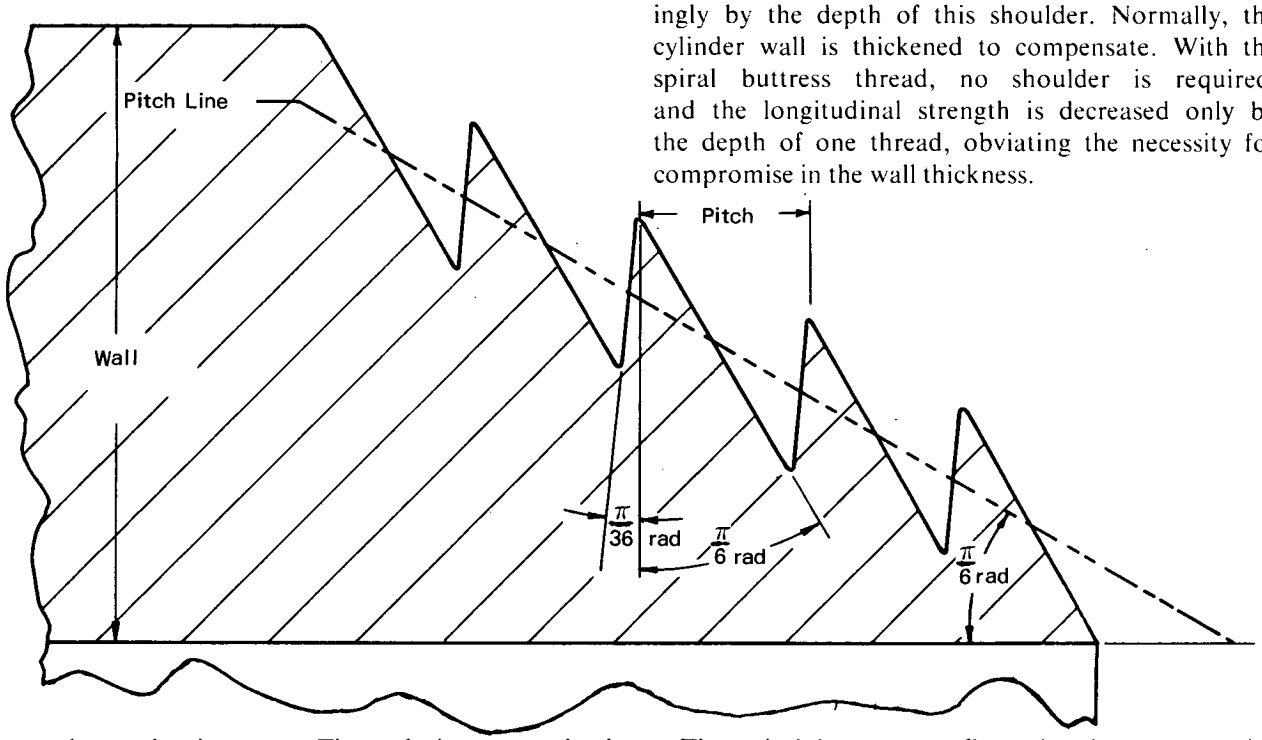
Langley Research Center

Strong, Easy-to-Mold, Spiral Buttress Thread

The problem:

Connect two molded plastic cylinders without changing wall thickness or sacrificing longitudinal strength at the juncture. The solution must lend itself to conventional molding techniques.

When a straight thread is used to connect two cylinders, a deep shoulder is required to accomodate each thread (male and female). The longitudinal strength of the cylinder wall is decreased accordingly by the depth of this shoulder. Normally, the cylinder wall is thickened to compensate. With the spiral buttress thread, no shoulder is required, and the longitudinal strength is decreased only by the depth of one thread, obviating the necessity for compromise in the wall thickness.



The solution:

Use a buttress thread with a steep taper.

How it's done:

A spiral buttress thread solves many of the problems associated with the conventional straight thread.

The spiral buttress configuration improves moldability and consequently the quality of molded threads. When compared to a conventional thread of constant pitch diameter, the spiral buttress form presents a cavity profile that remains more open to the influx of plasticized compound and therefore promotes a more rapid, complete and uniform thread fillout.

Other advantages of the spiral buttress thread are:

(continued overleaf)

it is easier to start; it is fully engaged in less than one rotation, regardless of its length or diameter; it is score resistant and essentially jam proof; and it is very easy to disengage from its mold form, thereby simplifying part ejection.

Note:

Requests for further information may be directed to:

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Patent status:

Inquiries about obtaining rights for the commercial use of this invention may be made to:

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