

Technical Bulletin

To: Sales Force Date: January 29, 2018
From: Applications Engineering
Subject: What is HOBT2?

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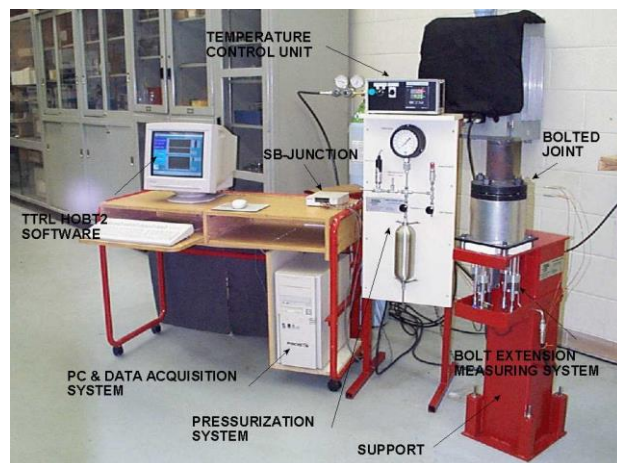
Introduction

HOBT2 stands for *HQ*t *B*lowout *T*est – *version 2*. This test is used to attempt to determine the safe operating temperature for PTFE based gaskets. The test can be run at various internal pressures, in order to qualify the gasket for 150# class flanges, or 300#, etc. Garlock currently runs the test at 435 psig, to qualify for 150# flanges. (The max pressure for 150# flanges is 290 psig; flanges can be tested at 1.5 times the max.)

Test procedure

The test is run in three steps. The first gasket is compressed, pressurized to a defined pressure and held while temperature is steadily increased until it blows out. The temperature is accurately controlled, while bolt load is monitored throughout the test. Thus, differences from specimen to specimen are easily defined.

PTFE based gaskets are affected by thermal cycles, where they may lose some bolt load during each heat up and cool down cycle. Because bolt load retention is probably the most important property for PTFE gaskets, two more gaskets are tested, this time using three thermal cycles. The computer now takes the bolt load and blowout data from the tests and calculates a safe operating temperature. For an added margin of safety, the computer subtracts 100°F from that value.



Understanding the results

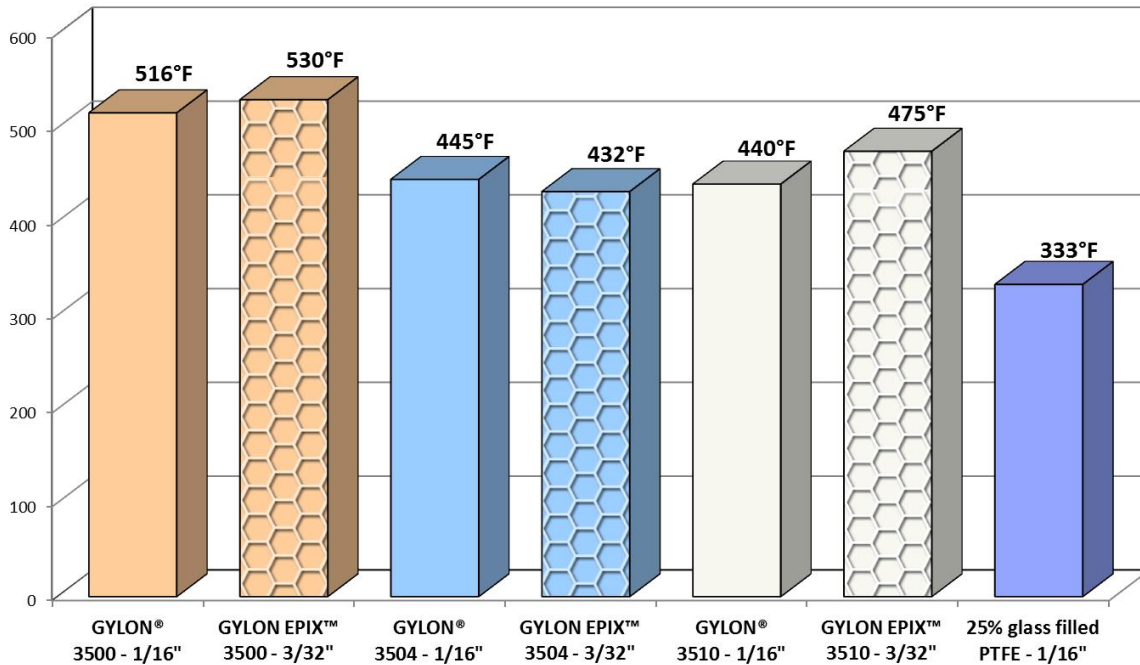
The simplest use of the data is to directly compare the values for various gaskets. Obviously, the higher the temperature value from the tests, the better. For example, the HOBT2 results for the top GYLON styles (3500, 3504 and 3510) show a significantly higher recommended temperature over traditional 25% glass filled, skived PTFE materials (see graph).

HOBT2 - HOt Blowout Test Results

(with thermal cycles)

Calculated Recommended Operating Temperature

Media: Nitrogen - Test Pressure: 435 psig



But the competitive product is OK at lower temperatures, right? Maybe not. There is another, less obvious GYLON advantage shown with the HOBT2 results. There is an advantage to using a GYLON gasket even when the operating temperatures are below the rating for the competition. Remember, a higher HOBT2 result means that the GYLON maintains bolt load better than the competition. That means that even at 250°F, the GYLON will maintain more bolt load. Since the HOBT2 test uses only three thermal cycles, and since many applications could involve numerous cycles PER DAY, the long term loss of bolt load will eventually catch up with the lesser material.