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Technical Literature C-03

Creep Resistance of AURUM®

Within the range of accuracy for practical use, a product of metal can be generally designed on the assumption that they are isotropically elastic bodies. However, since plastics display a viscoelastic behavior even at room temperature in many cases, the creep resistance of the plastics becomes a very important item of evaluation in designing general products as well as products to be used primarily as substitutes for metal products.

AURUM® shows a high glass transition temperature (250ºC). In this respect, AURUM® is considered to have an advantage over other engineering plastics, exhibiting excellent creep resistance even at high temperatures.

Fig. 1 shows a comparison of the creep resistance at 150ºC of AURUM® and representative engineering plastics U polymer (glass transition temperature: 193ºC) and PEEK (glass transition temperature: 143ºC).

AURUM® has satisfactory creep resistance even under heavy load.

Furthermore, Fig. 2 shows changes in the creep resistance of fiber-reinforced resins. Fig. 2 suggests that the AURUM® resin reinforced with glass fiber or carbon fiber is suitable for those applications requiring very high creep resistance.

Fig. 1 Changes with Time in Tensile Creep (150ºC)

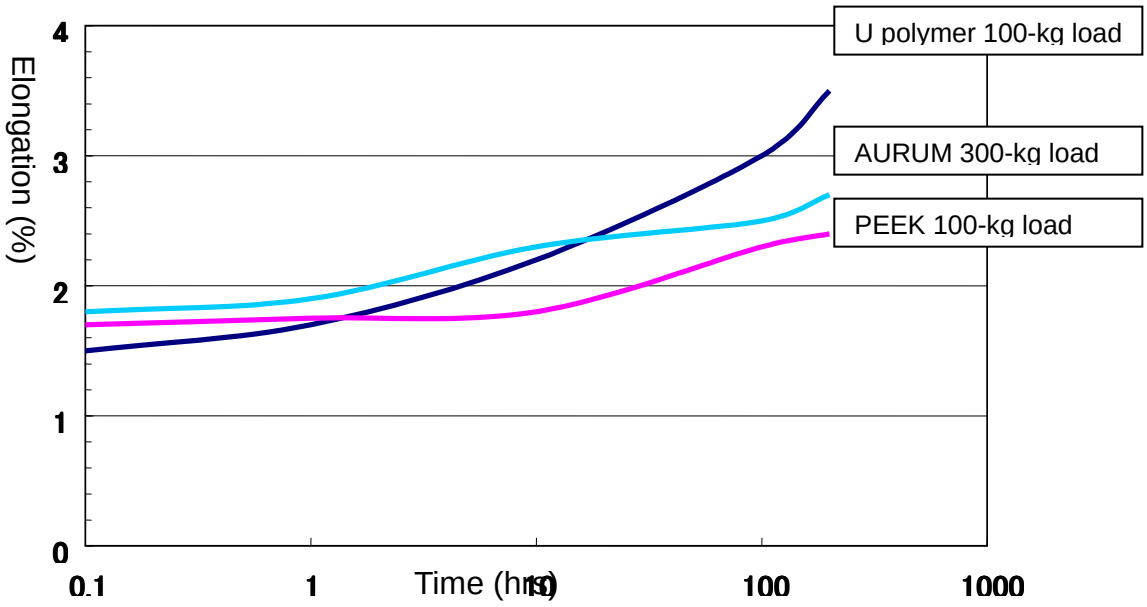
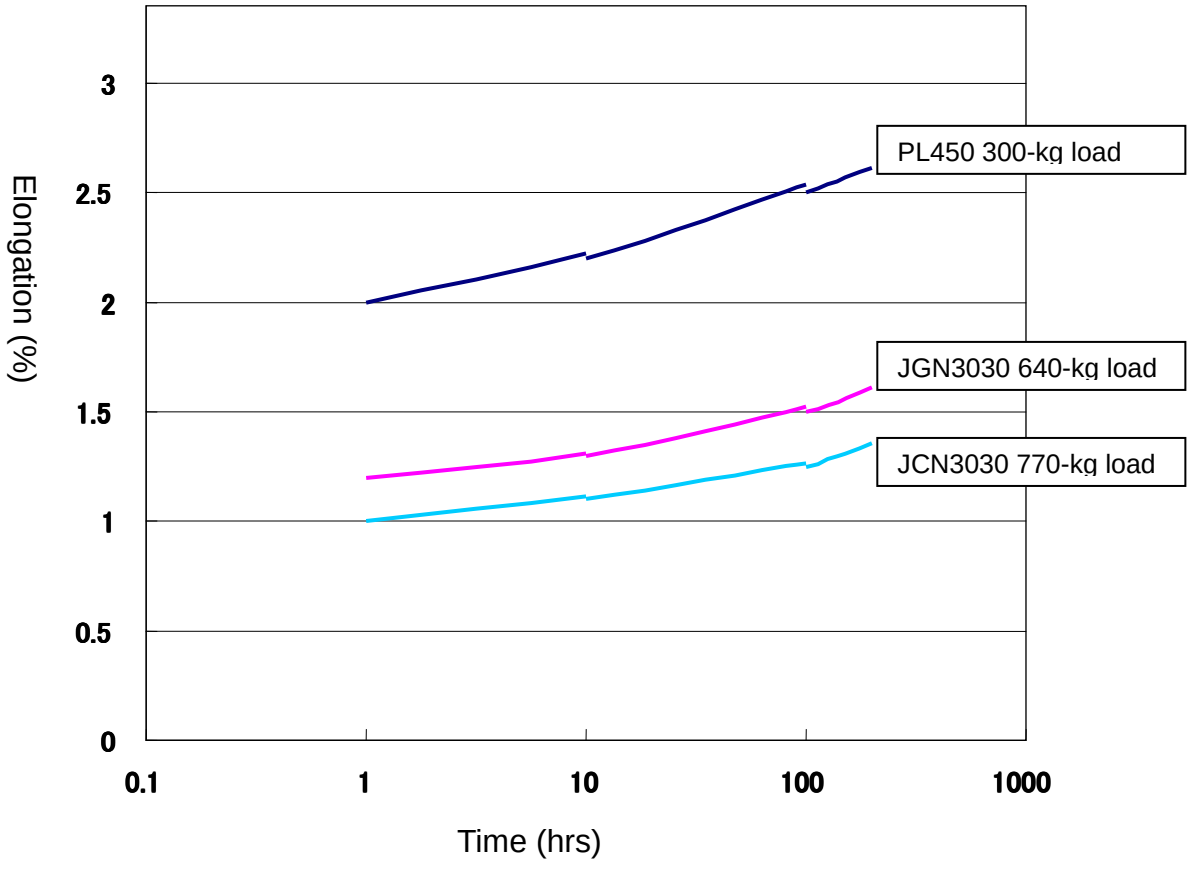


Fig. 2 Changes with Time in Tensile Creep (150℃)



The information contained herein is based on the information and data available at this moment, but none of the data or evaluation results contained herein provide any warranty whatsoever.

Fig. 3 Tensile Creep Proper Resistance of JCN3030