

Creep

PPS has an excellent creep resistance comparing with other engineering plastics. Especially, creep deformation is very small and may negligible below glass transition temperature; 90C. Creep property is shown by apparent creep modulus; $E(t)$ which is a function of time; t as follows;

$$E(t) = \sigma/e(t)$$

Where σ denotes applied stress and $e(t)$ denotes creep strain as a function of time; t .

In Figs.1 to 6, flexural creep data are shown at room temperature to elevated temperature for DIC.PPS main four grades. Creep phenomenon will investigate not only under flexural stress but also under tensile, compressive and shear stresses. However, the tendency of creep deformation may be same as flexural creep.

fracture will not occur permanently. Creep endurance limit is defined in DIN-50117 as follows; Average strain speed is below 1×10^{-3} %/hour between 25 to 35 hours after loading. Experimentally, the creep endurance limit of PPS is about 1/3 of the static strength at the same testing conditions.

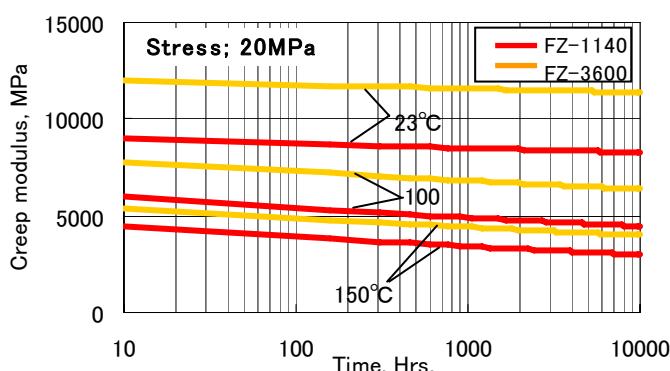


Fig.1 Flexural creep modulus vs. temperature

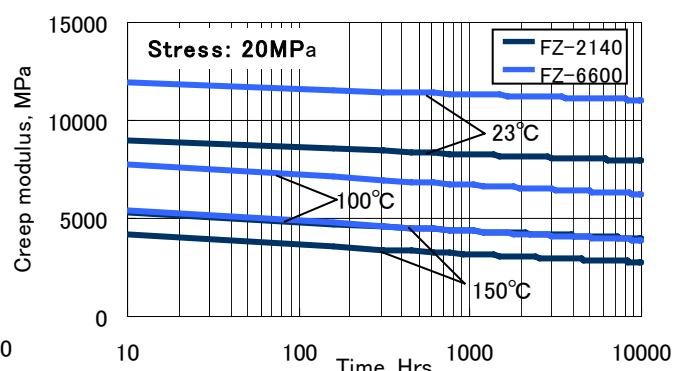


Fig.4 Flexural creep modulus vs. temperature

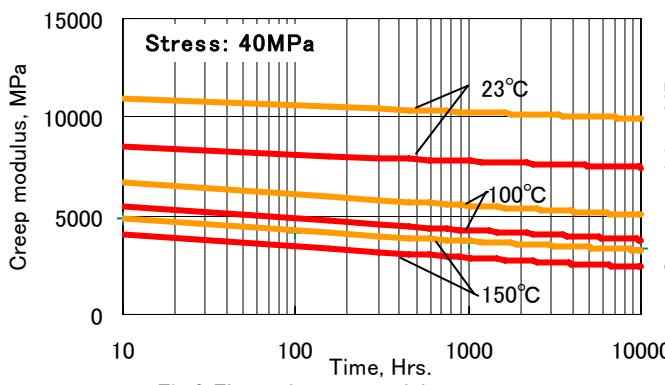


Fig.2 Flexural creep modulus vs. temperature

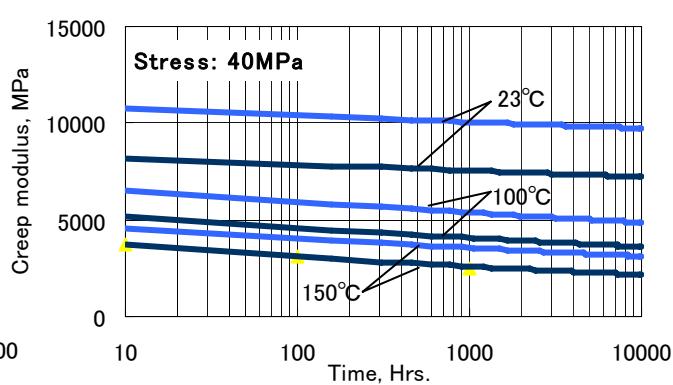


Fig.5 Flexural creep modulus vs. temperature

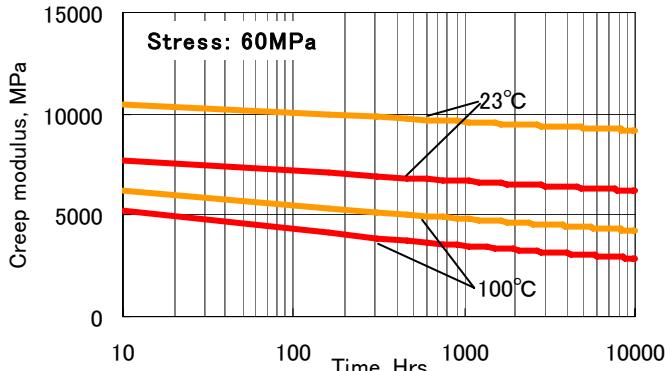


Fig.3 Flexural creep modulus vs. temperature

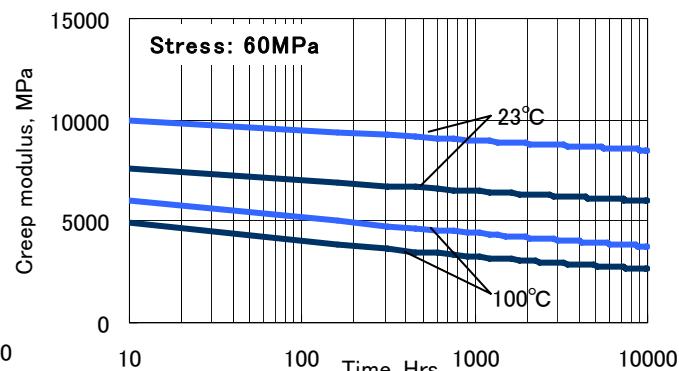


Fig.6 Flexural creep modulus vs. temperature

★Please refer to Material Safety Data Sheet for safety precautions prior to use. The information contained in this data sheet is based on tests or research DIC Corporation ('DIC') believes to be reliable, but no warranty is given by DIC concerning the accuracy or completeness thereof. The supply of the information does not release the recipient from the obligation to test the products as to their suitability for the intended applications and processes. DIC has no liability for any consequence of the application, processing or use of the information or the products. Information concerning the application of the products is not and should not be construed as a warranty as to non-infringement of intellectual property for a particular application.

