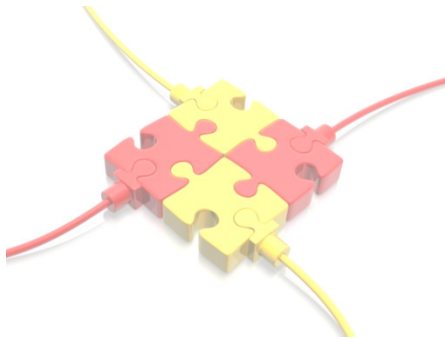


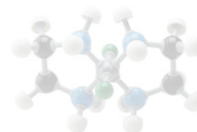
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Glass Fiber Reinforced PP for Washtanks

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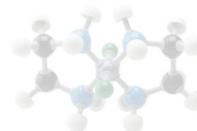




1. PP Parts for Washing Machines



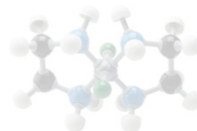
- Wash tank
- Soap dispenser
- Pressure Chamber
- Outlet hose



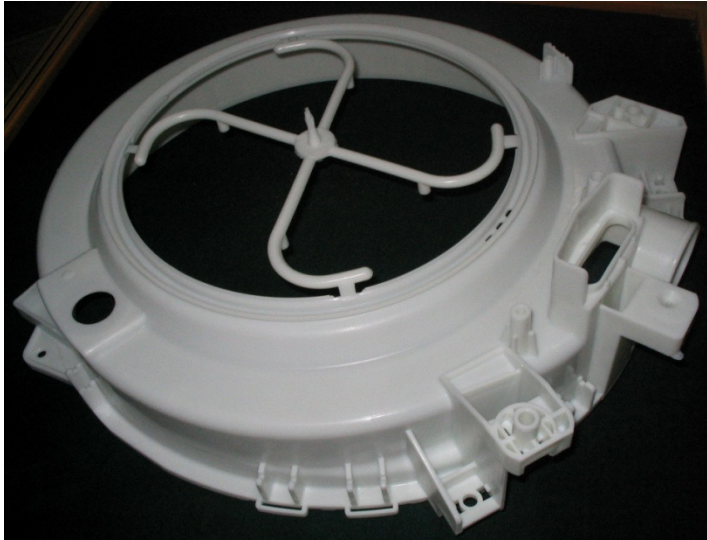


2. Advantages of Glass Fiber Reinforced PP

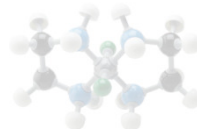
- **Excellent chemical resistance**
- **Light weight**
- **Low water absorption**
- **Good dimensional stability**
- **Good strength, stiffness and toughness**
- **Low cost**



3. Requirements for Washtanks



- **Resistant to detergent & hot water**
- **UL 2157- less than 50% decline in mechanical properties.**
- **Good combination of strength, stiffness & toughness**



4. Kingfa Glass Fiber Reinforced PP for Washtanks

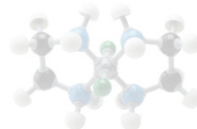


➤ **PP+30%GF (PP with 30% short glass fiber):**

Grade: GFPP-30

➤ **PP+15%LGF(PP with 15% long glass fiber):**

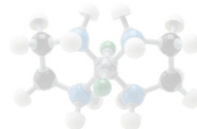
Grade: GFPP-L15



4.1 PP+30%GF (GFPP-30)

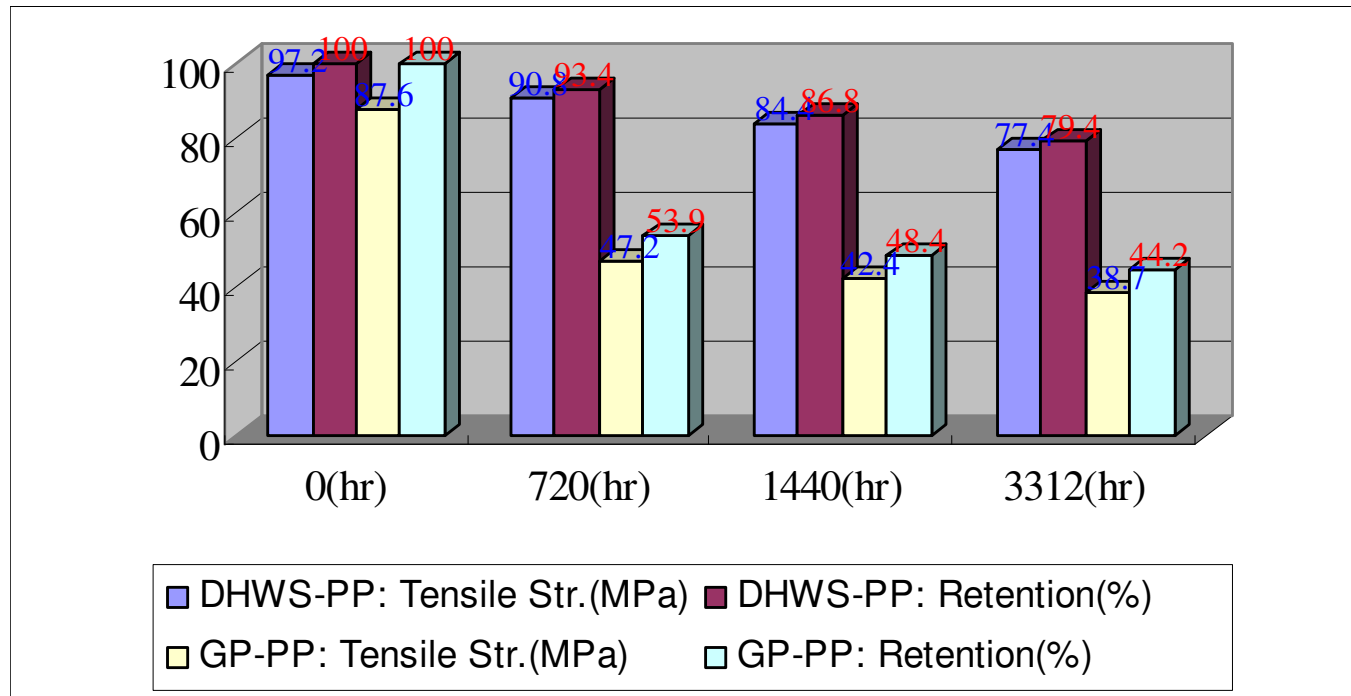


- ✓ High strength, stiffness & toughness
- ✓ Excellent resistance against detergent & hot water
- ✓ UL 2157 (undergoing)





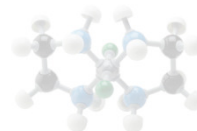
4.1.1 Tensile Strength



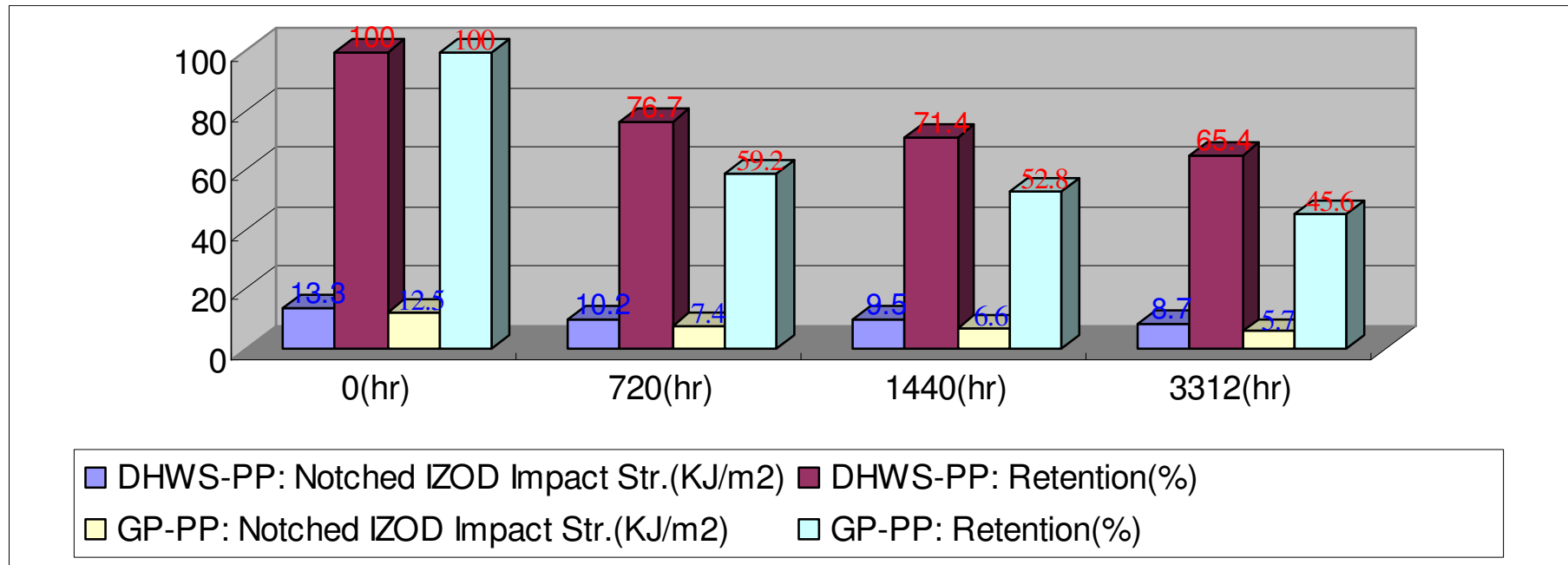
Material: GFPP-30
Conditions : 82°C, 2.5 wt% OMO
Duration: 30, 60 & 138days
Test standard: ISO 527-1/2

Note: DHWS-PP (Detergent & hot water stabilized glass fiber reinforced PP)

GP-PP (General purpose glass fiber reinforced PP)



4.1.2 Notched Izod Impact Strength



Note: DHWS-PP (Detergent & hot water stabilized glass fiber reinforced PP)

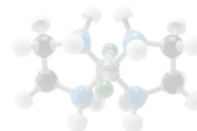
GP-PP (General purpose glass fiber reinforced PP)

Material: GFPP-30

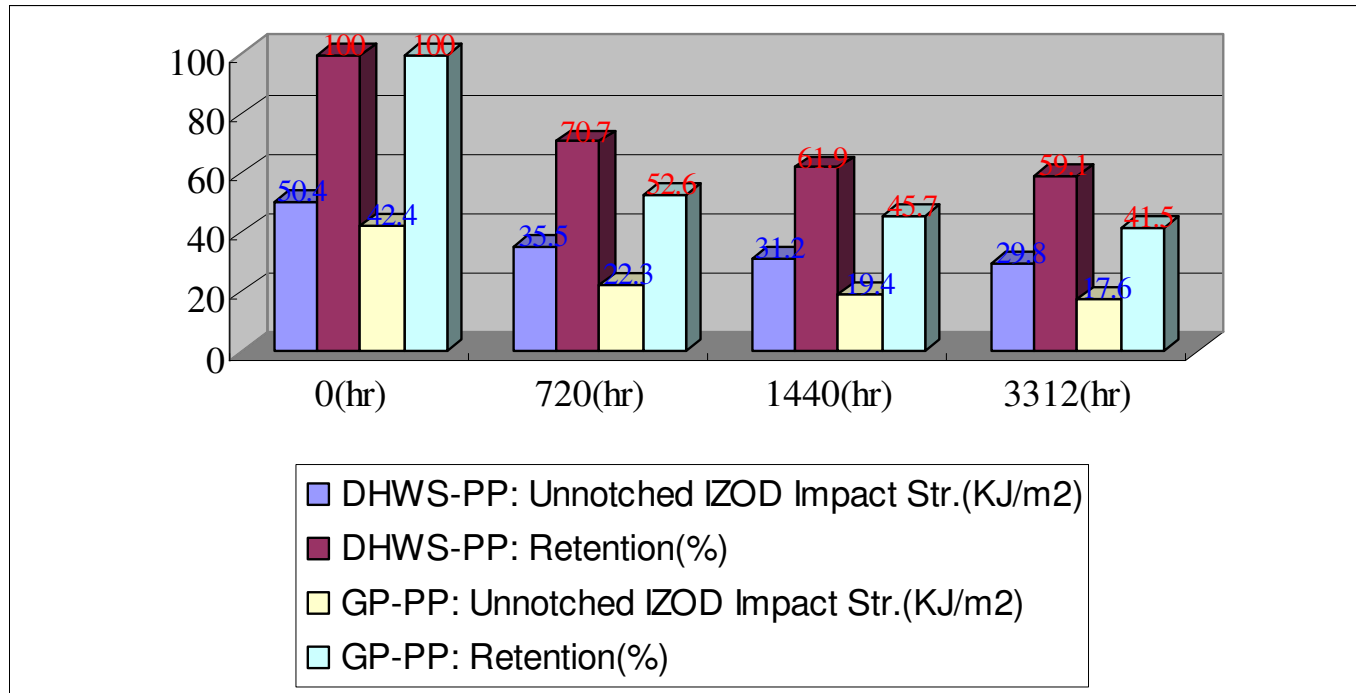
Conditions : 82°C, 2.5 wt% OMO

Duration: 30, 60 & 138days

Test standard: ISO 180/1A

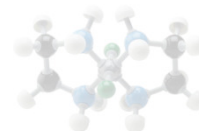


4.1.3 Un-notched Izod Impact Strength

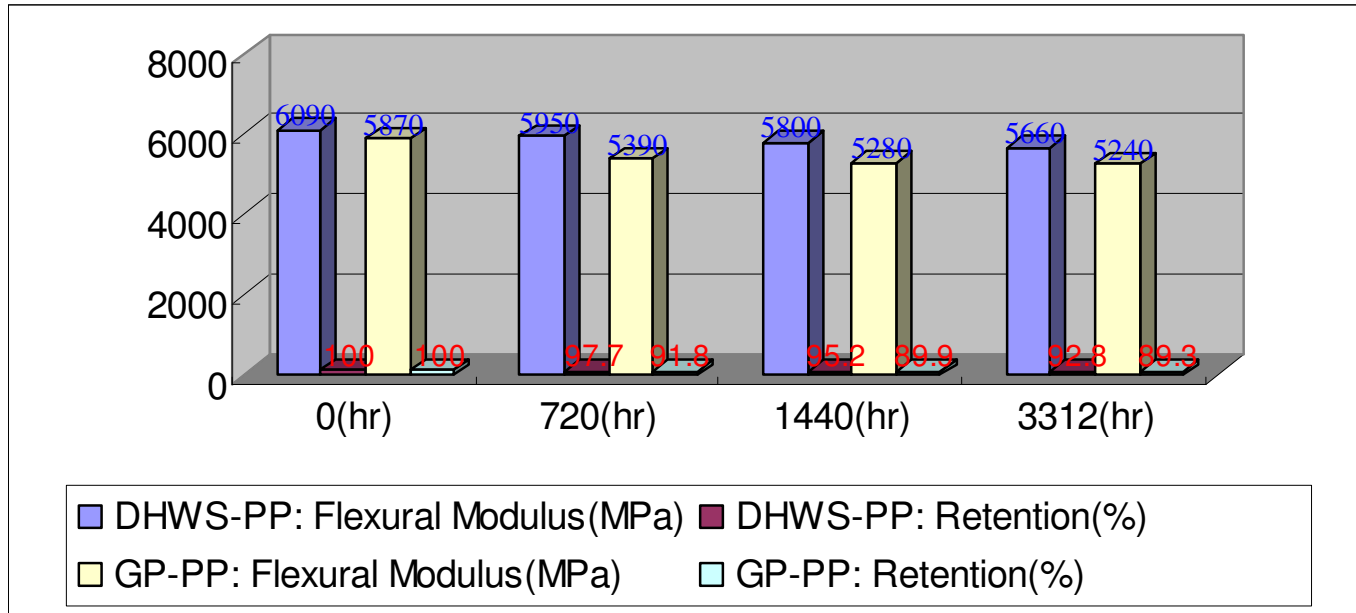


Material: GFPP-30
Conditions : 82°C, 2.5 wt% OMO
Duration: 30, 60 & 138days
Test standard: ISO 180/1U

Note: DHWS-PP (Detergent & hot water stabilized glass fiber reinforced PP)
 GP-PP (General purpose glass fiber reinforced PP)



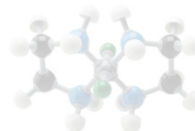
4.1.4 Flexural Modulus



Material: GFPP-30
Conditions : 82°C, 2.5 wt% OMO
Duration: 30, 60 & 138days
Test standard: ISO 178

Note: DHWS-PP (Detergent & hot water stabilized glass fiber reinforced PP)

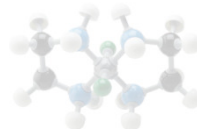
GP-PP (General purpose glass fiber reinforced PP)



4.2 PP+15%LGF (GFPP-L15)

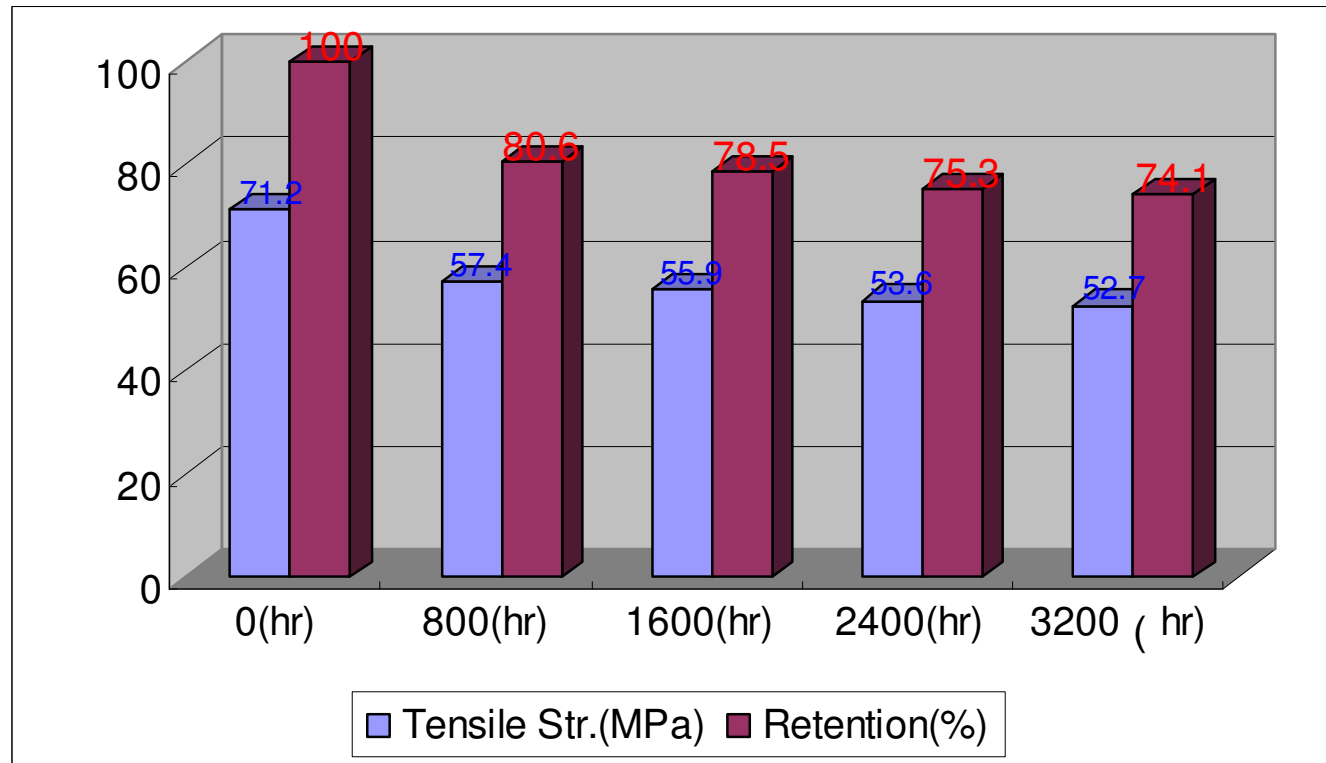


- ✓ **Good mechanical properties**
- ✓ **Excellent resistance against detergent & hot water**
- ✓ **UL 2157 (undergoing)**





4.2.1 Tensile strength



Material: GFPP-L15

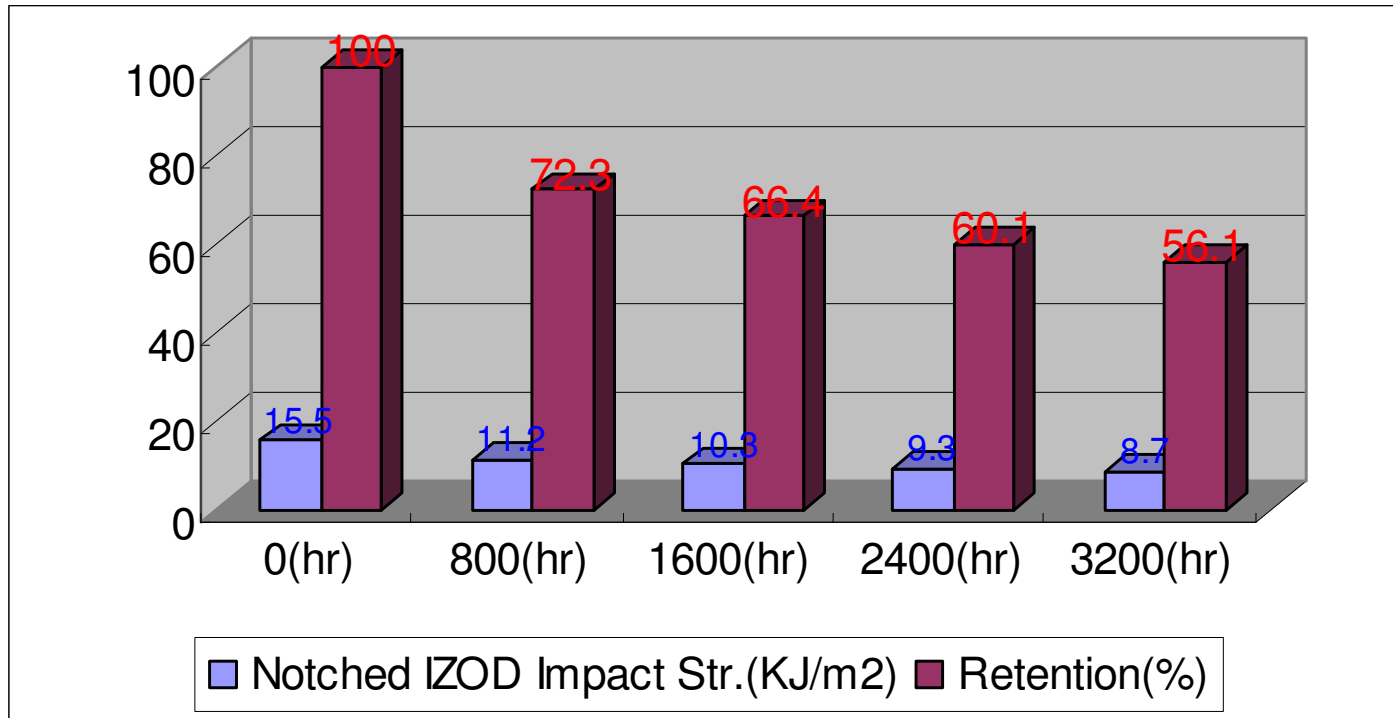
Conditions : 95°C, 1 wt% OMO

Duration: 800, 1600, 2400 & 3200hrs

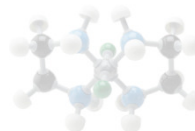
Test standard: ISO 527-1/2



4.2.2 Notched Izod Impact Strength

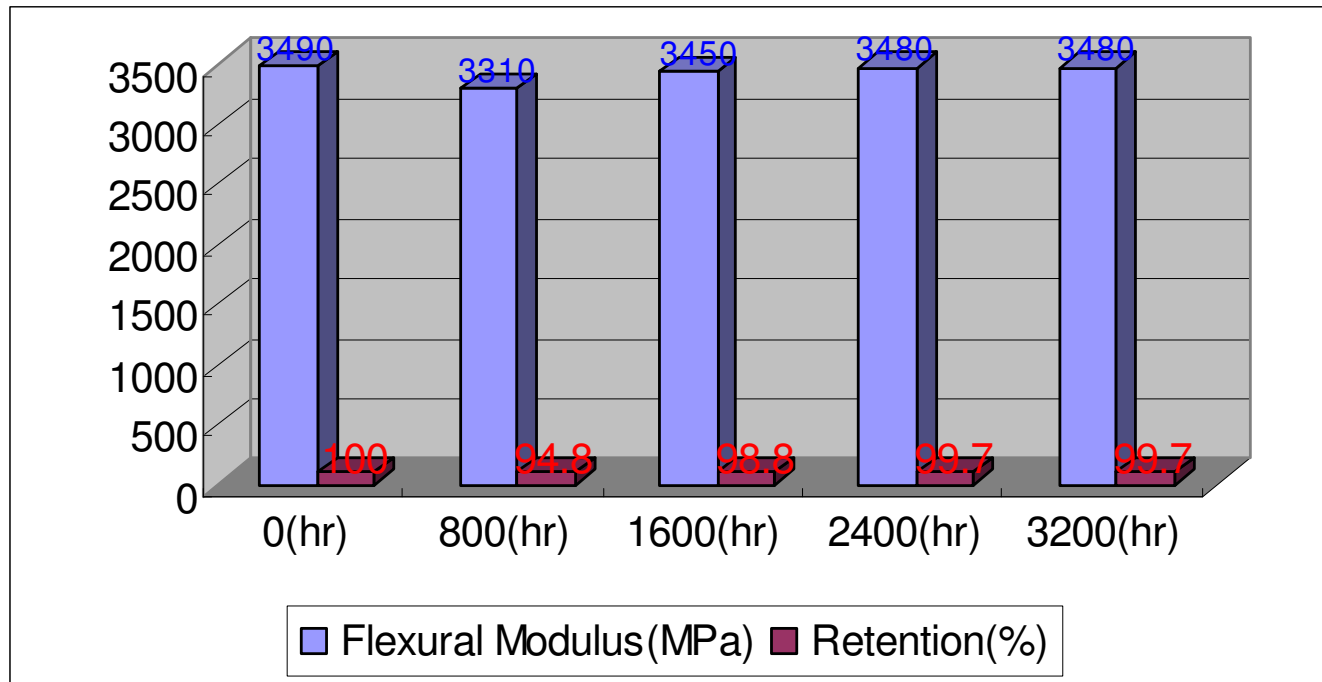


Material: GFPP-L15
Conditions : 95°C, 1 wt% OMO
Duration: 800, 1600, 2400 & 3200hrs
Test standard: ISO 180/1A





4.2.3 Flexural Modulus

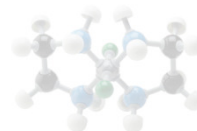


Material: GFPP-L15

Conditions : 95°C, 1 wt% OMO

Duration: 800, 1600, 2400 & 3200hrs

Test standard: ISO 178

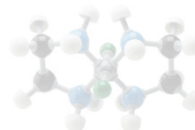


5. Comparison between GFPP-30 & GFPP-L15



Properties	Test Standards	Test Conditions	SI Units	GFPP-30	GFPP-L15
Density	ISO 1183	23°C	g/cm ³	1.12	1.0
Tensile strength	ISO 527-2	10mm/min	MPa	95	75
Flexural Strength	ISO 178	2mm/min	MPa	130	105
Flexural Modulus	ISO 178	2mm/min	MPa	6000	3500
IZOD Impact Strength	ISO 180/1A	23°C	KJ/m ²	15	16.5
Heat Deflection Temp.	ISO 75-2	1.82MPa	°C	150	150
Strength & Stiffness				+ +	+
Toughness				+	+ +
Dimensional stability				+ +	+ +
Cost-performance				+	+ +

Note : + - Good; + + - Better

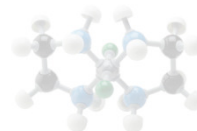




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*European Chemicals
Agency*





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