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GEORG FISCHER
PIPING SYSTEMS

R&D

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Little Rock, March 30, 2006

CERTIFICATE OF COMPLIANCE
PVC Schedule 40 Pipe & Fittings

Dear Valued Customer:

This letter is to certify that the pipe and fittings of PVC, Type I material as made by George Fischer Sloane, Inc. conform to the requirements of ASTM D1784-03, "Standard Specification for Rigid Poly(Vinyl Chloride) (PVC) Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds."

PVC Schedule 40 plastic fittings meet the requirements of ASTM D2466-05, "Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40."

PVC Schedule 40 pipe meets the requirements of ASTM D1785-05, "Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120." Pipe within the diameter range 1 ¼" through 12" meets ASTM D2665-04, which covers DWV applications. Belled pipe meets ASTM D2672-96a.

The pipe and fittings are listed by NSF International as meeting the requirements of NSF/ANSI 14 and NSF/ANSI 61 for handling potable water. The pipe is certified by NSF as meeting the Uniform Pluming Code and CSA B137.3, where applicable.

Yours sincerely,

George Fischer Sloane, Inc.

James L. Gilchrist

James Gilchrist
R&D Manager

Harvel Schedule 40 PVC Pipe Technical Data

PVC Pipe Physical Properties		
GENERAL	**Value**	**Test Method**
Cell Classification	12454	ASTM D1784
Maximum Service Temp.	140°F	
Color	White, Dark Gray	
Specific Gravity, (g/cu.cm @ 73°F)	1.40 +/-.02	ASTM D792
Water Absorption % increase 24 hrs @ 25°C	0.05	ASTM D570
Hardness, Rockwell	110 - 120	ASTM D785
Poisson's Ratio @ 73°F	0.410	
Hazen-Williams Factor	C =150	
MECHANICAL		
Tensile Strength, psi @ 73°F	7,450	ASTM D638
Tensile Modulus of Elasticity, psi @ 73°F	420,000	ASTM D638
Flexural Strength, psi @ 73°F	14,450	ASTM D790
Flexural Modulus, psi @ 73°F	360,000	ASTM D790
Compressive Strength, psi @ 73°F	9,600	ASTM D695
Izod Impact, notched, ft-lb/in @ 73°F	0.75	ASTM D256
THERMAL		
Coefficient of Linear Expansion (in/in/°F)	2.9×10^{-5}	ASTM D696
Coefficient of Thermal Conductivity (Cal.)(cm)/(cm2)(Sec.)(°C) BTU/in/hr/ft.2/°F Watt/m/°K	 3.5×10^{-4} 1.02 0.147	ASTM C177
Heat Deflection Temperature Under Load (264 psi, annealed)	170	ASTM D648
Specific Heat, Cal./°C/gm	0.25	ASTM D2766

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ELECTRICAL		
Dielectric Strength, volts/mil	1,413	ASTM D149
Dielectric Constant, 60Hz, 30°F	3.70	ASTM D150
Volume Resistivity, ohm/cm @ 95°C	1.2×10^{12}	ASTM D257
GF Harvel PVC Pipe is non-electrolytic		
FIRE PERFORMANCE		
Flammability Rating	V-0	UL-94
Flame Spread Index	<10	
Flame Spread	0-25	ULC
Smoke Generation	80-225	ULC
Flash Ignition Temp.	730°F	
Average Time of Burning (sec.)	<5	ASTM D635
Average Extent of Burning (mm)	<10	
Burning Rate (in/min)	Self Extinguishing	
Softening Starts (approx.)	250°F	
Material Becomes Viscous	350°F	
Material Carbonizes	425°F	
Limiting Oxygen Index (LOI)	43	ASTM D2863
Clean Room Materials Flammability Test	N/A	FM 4910