MILWAUKEE VALVE

PRODUCT BULLETIN

IND-0913
DATE 9/04/13
SUBJECT: NXT SEAT MATERIAL

NEW NXT SEAT MATERIAL FOR: F20, F90, F91, 20 AND 35 SERIES BALL VALVES

To: Milwaukee/Hammond Valve Product Users: Some information on the NXT seat material change over.

We feel this material give us superior performance characteristics over PTFE virgin (01) and RPTFE glass filled (02) seat material for our current series of ball valves:

(F90/F91, F20, 35 SERIES AND 20 SERIES): Features and Benefits:

- Reduced seat creep under load and high pressure (Less cold flow)
- Lower permeation (no-pop corning of the seats or forced separation of the glass fibers)
- Chemical inertness (Improved chemical resistance)
- Improved heat resistance (-20 to 475 degrees F)
- Lower coefficient of friction over standard seat materials (Lower operating torque)
- It is equal to the 03 seat material in temperature, but recommend only for 150 psi steam vs. 250 psi for the 03 or (multi-filled seat)
- The new designators for the NXT seat material will be,(N) or (N1)
  Examples: (20SSOR-N1-LL-12) OR (F201CSN2 300)
- Updated specification sheets have been posted to the Website to cover the changes to the products listed above.

If you have any questions regarding this change, feel free to call or e-mail me with your questions.

Regards,

Brian L. Isaac
Product Manager
Industrial Ball Valves.

This bulletin releases a generalized chart showing ball valve seat material properties for various seat materials currently offered in Milwaukee Valve Company commercial and industrial valve products, as presented on sheet 2 & 3 of this bulletin. For materials and/or applications not shown on this chart, contact Milwaukee Valve Engineering.

Users of this information are reminded that the pressure and temperature limitations of the valves in service are based primarily on the valve structure, metallurgy, and end connections. This seat chart is to be used in conjunction with Milwaukee Valve catalogs, chemical compatibility charts, and industrial standards, (e.g. ASME/ANSI B16.34, ASME/ANSI B16.5, API 608, etc.), to aid in the selection of valve configurations. Final selection of valve configurations and materials, including seat materials, remains the responsibility of the end user (see note at the bottom of this technical bulletin).

Milwaukee Engineering is refreshing our data on valve torques versus temperature and pressure for various seat materials and valve styles. For assistance in sizing of actuators, and to address other questions regarding seat material selection in particular or in general, contact the inside sales team at Milwaukee Valve Company.

Seat Selection Guide					
Seat Code	Material	Temperature Range °F	Chemical Resistance	Valve Series Available	Application Notes
01	**Virgin Teflon®** Polytetraflourethelene (PTFE)	-430 to 450	- Excellent - Not Recommended for Molted alkali metals, Liquid or gaseous fluorine and a few fluro-chemicals	20, 30, 35, 41, F90/F91, & F20	- Highly Inert - Limited toughness; therefore not always first choice for high cycles - Very soft, can be forgiving of particle contamination - Good low temperature / Cryogenic material
02	**Glass Filled TFE** Reinforced Teflon® (RPTFE)	-40 to 450	- Similar to 01 - Not for use in concentrated caustic service	20, 30, 35, 41, F90/F91, & F20	- Industry workhorse, generally good for most services - Not recommended for steam, concentrated caustics, or high cycles at elevated temperatures
03	**Multifil** Carbon Graphite Reinforced Teflon® (C-RPTFE)	-100 to 500	- Similar to 01 - Check compatibility of fluid media with carbon	20, 30, 35, 41, F90/F91, & F20	- Tougher material for high cycle and reduced creep in moderate temperatures - Good for low pressure steam (< 250 psi) shut-off service
04	**UHMWPE** Ultra High Molecular Weight Polyethylene	-435 to 180	- Attacked by aromatic or halogenated hydrocarbons and strong oxidizing agents (Nitric Acid, Oleum, & Halogens)	20, 30, 35, 41, & F90/F91	- Tobacco Processing, Nuclear applications where TFE is not allowed - High chemical and abrasion resistance services - Limited temperature range
06	**Endurofil** Polyetheretherketone (PEEK)	-100 to 550	- Broad chemical and radiation resistance - No susceptibility to hydrolysis (Steam/Hot Water) - Strong acids and bases at high concentrations and temperature will effect material	30, 35, 41, & F90/F91	- Very tough material suitable for high cycles, moderate steam service, and other demanding applications - Best performing high temperature plastic - Used in paper mills, chemical processes, and other similar service (such as sugar mills and vegetable processors)

Seat Selection Guide					
07	**Delrin®**	-20 to 180	- Good for Hydraulic Oil, Natural Gas, & Agricultural Chemicals	41	- Good for certain high pressure service where temperature is ambient or moderate - Limited chemical resistance
N1	**NXT 75** Teflon® (NXT)	-430 to 475	- Similar to 01 - Better than 02	30, 35, F90/F91, & F20	- Improved permeation resistance (Phosgene, Butadiene, etc.) - Less creep than PTFE - Smoother, less porous surfaces

* For pressures, temperatures, and/or other materials outside the chart please consult factory.

** These are material temperature ratings, Valve material and design need to be taking into account when establishing valve ratings.