

# Fire Flex® Exhaust Hose Beats Heat of Fire Truck Emissions

**B**eating the heat took on new meaning for the City of Hollywood, Florida, Fire Department. Its fire, rescue and beach safety operations routinely operate in 90-degree-plus temperatures without a hitch. But when the high exhaust temperatures of its new rescue vehicles began causing hoses from the established manufacturer to melt in its fire station exhaust systems, it was time to call in its own outside team which included Masterduct, Inc., Houston, Texas, a well know established company known for innovative technical high temperature hoses.

“New vehicles can generate much higher exhaust temperatures,” says Dan Dapolito, Division Chief of Administration for the Hollywood F.D. His Lieutenant Brian Cooke and Technical Director Septimus Isaac immediately contacted the exhaust system distributor for Florida and Georgia. Bladders that grip the exhaust pipes were failing with the new vehicles’ high temperature exhaust fumes, they reported.

## **Seeking a Solution**

The first solution-magnetic grippers to replace the bladders-proved ineffective. “When the exhaust hoses didn’t hold up due to these increased temperatures, we knew it was an issue,” Dapolito says. The severity of the situation made it evident that the Hollywood F.D. needed to conduct a top-level meeting which included the Fire Chief and the distributor, Masterduct, Inc., to participate in the initial meetings.

“Do you have all day?” Dan Dapolito jokes when asked about the importance of that meeting. The seriousness and response demanded by Dapolito and his team prompted swift action. “Things got realigned after that meeting,” Dapolito explains. Lines of communication were shortened and Masterduct was quickly on-board to find a new solution. Brad Bembenick, Vice President of Operations and Engineering for Masterduct, came in to innovate a new vehicle exhaust hose that could



*Hollywood, Florida, F.D. now uses Masterduct Fire Flex® dual temperature hose to exhaust high-temp fumes from newer engines. Upper hose section, above safety disconnect, is a multi-ply hose for maximum flexibility, strength, and temperature resistance*

meet the clear requirements set by Hollywood’s fire chief and his team. “Masterduct had to come up with a better answer,” says Dapolito. Bembenick dedicated time and expertise with on-site visits; he was able to review first-hand the application and installation of products from their previous supplier. Several prototype special hoses were provided by Masterduct before settling on a custom hose engineered to offer extreme high heat exhaust protection for the first two feet of exhaust hose, then a more flexible, upper hose 13-15 –foot length to

exhaust away the high temperature fumes encountered in the fire station area.

Cost-effective Dual Temperature Hose  
“The combo hose is more cost-effective” Dan Dapolito remarks with the agreement of his lieutenant Brian Cooke and technical liaison Septimus Isaac. The reinforced, lower section of hose, closer to the exhaust source, supports the connection nozzle in a rigid fashion. The upper hose section, above the safety disconnect, incorporates a flexible, multiple ply design. The Fire Flex® hose is easy to handle, and it turned a hot situation into a better-tempered solution.



*Rigid, reinforced 2-ft section of high-temp Fire Flex® dual temperature hose, below the safety disconnect, enables the firefighter to place the hose collection nozzle onto the tailpipe without bending over.*

“As long as the hose works, we are happy,” says Dapolito regarding the Masterduct Fire Flex® custom innovation. External appearances, like custom, reinforced hose design, and the substitution of an elbow where a saddle used to be in the new high-temp vehicle exhaust system, are significant changes easily adapted by the Hollywood F.D.

#### **Lessons Learned Promote a Vision**

Some two dozen hoses are envisioned to be part of the switch-over to the new Fire Flex® high-temp hose. Six fire stations in all are involved- some with two- rail, some with three-rail systems. Each rail has two separate exhaust hoses, with rescue and fire vehicles parked front-to-back below the station living quarters. The break-away safety device helps prevent damage to the exhaust system by

separating the upper and lower exhaust hose sections in the event that the exhaust nozzle fails to properly release when the vehicle exits the fire station. Masterduct's Fire Flex® design of the stiff lower-hose section, allows the firefighter to connect the nozzle to the tail pipe without bending over and helps keep the firefighter from breathing the exhaust fumes.

#### **Highly-Engineered Materials**

This lower hose section stands up to extreme high heat and offers good tear and puncture resistance. Highly-engineered materials with flame retardant make possible excellent heat stability with reliable performance in continuous use.

#### **Working on New Ideas**

As for the new Masterduct Fire Flex® hose? “It's working. That's what's important,” says Hollywood F.D.'s Dan Dapolito. Half of the department's six firehouses-the high volume stations-now have the new Fire Flex® hose. “It looks like all of the new rescue trucks will have higher exhaust temperatures in the future,” Dapolito observes. As far as the total vehicle exhaust system, the department team is continuously working on new ideas to make the systems easier to use and more cost-effective.

“The biggest change has been in communications” Administrative Chief Dapolito says today. “The exhaust hoses are holding up and are working. I have the vision of replacing all the hoses with these new ones” Dapolito concludes.