Verizon NEBS™ Compliance: Pedestal Terminal Closures

Verizon Technical Purchasing Requirements

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Table of Contents

1.0 PURPOSE 5
2.0 SCOPE 5
3.0 REFERENCES 5
4.0 ACRONYMS 5
5.0 TEST REQUIREMENTS FOR PEDESTAL TERMINAL CLOSURES 5

1.0 PURPOSE

The purpose of this Verizon Technical Purchasing Requirement document is to provide FOC testing requirements for Pedestal Terminal Closures

2.0 SCOPE

FOC Products

3.0 REFERENCES

FOC Memo #28	GR-13-CORE Outside Pedestal
GR-13-CORE	Generic Requirements for Pedestal Terminal Closures

4.0 ACRONYMS

FOC	Fiber Optic Components
ITL	Independent Testing Laboratory
OSP	Outside Plant

5.0 TEST REQUIREMENTS FOR PEDESTAL TERMINAL CLOSURES

Verizon is considering using Pedestal Terminal Closures for outside plant application. The following table defines the test requirements for qualifying these units. All the testing must be completed by a Verizon approved ITL.

FOC Test Program for Pedestal Terminal Closures			
	Task Name	**Samples**	**Comments**
3.1	Product Samples		Verify
3.2	Product Changes		Verify
3.3	Safety and Reliability Considerations		Inspect
3.4	Metallic Materials	All	Verify after environmental testing
3.5	CR3-12 Plastic and Non-metallic materials		Verify
	R3-13 and CR3-14, Chemical Testing	30 test bars/material	3 test bars/material/chemical
	R3-15 - Corrosion of metals	All	Verify after environmental testing
	R3-16 UL94 flame testing to a 94-5VA rating	3 samples/material	UL94 flame testing to a 94-5VA rating
	R3-17, Fungus testing to ASTM G-21	3 test bars/material	Per ASTM G21, rating of ≤ one
	R3-18, UV testing (exterior plastic components)	12 test bars/ material	6 samples, UV exposure - 2000 hrs, tensile test 6 unexposed and 6 UV exposed
	R3-19 Oven Aging	All seals and gaskets	Materials must remain flexible
	R3-20 Ozone	Rubber seals and gaskets	No signs of cracking after testing
	R3-21 Adhesive	All	Verify gaskets using adhesive maintain adhesion after all environmental tests in this document
	R3-22 Copper Corrosion	All gaskets, seals and tape	Shall not cause corrosion to copper
3.6.1	R3-23 thru R3-25, Finish	All	Verify all colors
3.6.2	R3-26, Painted metallic housing gloss	2 / painted surface	Gloss of 60° Specular
	R3-27, Painted surfaces - uniform color	2 / painted surface	Inspect
	R3-28, Gloss and Haze	2 / surface	Gloss of 60° Specular
3.6.3	R3-29, Scrape Adhesion	2 / painted	17.5 lbs and scrape loop

FOC Test Program for Pedestal Terminal Closures			
Task Name		**Samples**	**Comments**
		surface	
3.6.4	R3-30, Flexibility	2 / painted surface	40 in-lb impact
3.6.5	R3-31, Adhesion After Exposure	2 / painted surface	Scribe sample, 30 day salt fog exposure, no corrosion
3.6.6	R3-32, UV Resistance	All painted exterior components	After UV testing is completed, must meet flex requirements - R3-30
3.7	R3-33 thru R3-34, Mounting Hardware	All	Verify from Documentation and after Salt Fog
3.8	R3-35 thru R3-50, Design features	All	Inspect and Verify as required
3.9	R3-51 thru R3-53 Security	All	Verity they meet the 10 and 25-in-lbf torque
3.10	R3-54 thru R3-60, Bonding and Grounding	By design	1000 amps for 20 seconds
3.11	R3-61 thru CR3-62, Documentation	All	Documentation review
3.12	R3-63 thru R3-70, Marking, Packaging, and Shipping	All	Documentation review
3.13	R3-71 thru R3-77, Installation and Maintenance	All	Documentation review
3.14	R3-78 thru R3-79, Quality	All	Documentation review
3.15	R3-80, Thermal Cycling	All	After 72 hours @ ambient - open, remove the cover and replace 20 times
3.16	R3-81, Weather tightness	All	Use the sample from the Thermal Cycling testing. Dust collection not to exceed that of sample 4.
3.17	R3-82, Rain Intrusion	All	5 minutes per vertical surface of rain at 40 psi.
3.18	R3-83, Flood Test	All	15-day water exposure submerged to 1 ft above the top of the closures.
3.19	R3-84, Impact Resistance	All	100 ft-lb impacts to top and sides, metallic closures to be tested at room temp while non-metallic must be conditioned to -29°C for 8 hours before test. Test within 10 minutes of removing from chamber
3.20	R3-85 thru CR3-86, Bullet Resistance	By Design	12-Gage shotgun and either a .22 or .30-06 caliber rifle

FOC Test Program for Pedestal Terminal Closures			
	Task Name	**Samples**	**Comments**
3.21	R3-87 thru O3-88, Fire Resistance	By Design	In situ optical monitoring must be performed on 60% of the ports at 1625 nm. Optical loss shall not exceed .05 dB from base measurement.
3.22	R3-89, Power Cross Ignition	One unit	12 Gauge wire conducting 200 Amperes
3.23	R3-90, Salt Fog	By design	30 day salt fog, sample to maximize metallic members
3.24	R3-91, Temp Cycling w/ Humidity	All	In situ optical monitoring must be performed on 60% of the ports at all 4 wavelengths. Optical loss shall not exceed .05 dB from base measurement.
3.25	R3-92, Handling Shock	Worse Case	Unpackaged Shock
3.26	R3-93, Low-Level Vibration	By design	The test will be performed in a medium hand hold (17wide x 30 long x 24 deep) filled with washed play sand. The pedestal should be installed per manufacturer's instructions. In situ optical monitoring must be performed on 60% of the ports at all 4 wavelengths. Optical loss shall not exceed .05 dB from base measurement. Actual vibration parameters will be from GR-63-CORE transportation Section 5.4.3 using unpackaged curve 2.
3.27	R3-94, Earthquake	By design	The test will be performed in a medium hand hold (17wide x 30 long x 24 deep) filled with washed play sand. The pedestal should be installed per manufacturer's instructions. In situ optical monitoring must be performed on 60% of the ports at all 4 wavelengths. Optical loss shall not exceed .05 dB from base measurement.
3.28	R3-95, Fiber Plane	By design	Design/Engineering Analysis At -18 degrees C and +40 degrees C the engineer must open and close the pedestal dome five times.
	Verizon Special Requirements		
1	Chemical Emersion	30 test bars/material	In addition to the chemicals defined in R3-13 the following chemicals should be used: Igepal 10%, Cable filling compound, WD-40 water displacing lubricant, wasp and hornet spray (Rainbow), Isopropyl Alcohol 99% FO, splice encapsulating compound (Rainbow 410).
2	Fungus Rating	3 test bars/material	R3-13 must have a rating of 0

FOC Test Program for Pedestal Terminal Closures			
	Task Name	**Samples**	**Comments**
3	Security	All	In addition to the requirements in Section 3.9 the device will be tested for locking security on the side opposite from the lock.
4	Handling	All	Handling tests shall be performed per Section 6.3.5 of GR-771-CORE. The product should be dropped on one of its longitudinal sides.
5	Compatibility with Hand Holds		The Pedestal shall be mounted to handholds using the manufacturer's instructions. The hardware shall be tightened with 10% more than the specified torque. The mounting process shall be repeated 15 times. The pedestal to handhole interface must then be inspected for openings that would allow access from the external environment. Verizon has two approved vendors with two sizes each for hand holds, Carson and Channel and all must be used in the evaluation.
6	Rodent Resistance	5/material	Performed by testing components to a Rockwell hardness of R 87.