Verizon NEBS™ Compliance: Non-Concrete Splice Enclosures (Handholes)

Verizon Technical Purchasing Requirements

VZ.TPR.9421

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CHANGE CONTROL RECORD:

Version	Date	Action*	Reason for Revision
1	*07/26/2007*	New	New Document
* New, Add, Delete, Change, Reissue			

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ISSUED BY:

Name, Title, Organization	Date
Vijay Jain M.Tech., M.A.Sc., PMP FOC-ITL Program Manager NEBS & Quality Assurance Verizon Technology Organization 320 St. Paul Place, Floor 14 Baltimore, MD 21202 Phone: 410-736-7947; Fax: 410-736-5144 E-mail: vijay.x.jain@verizon.com	07/26/07

APPROVED BY:

Name, Title, Organization	Date
Ludwig C. Graff Director, NEBS Compliance and Quality Assurance Verizon Technology Organization Systems Integration and Testing 320 St. Paul Place, Floor 14 Baltimore, MD 21202 Phone: 410-736-5904; Fax: 410-736-5144 E-mail: ludwig.c.graff@verizon.com	07/26/07

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1.0 PURPOSE

The purpose of this Verizon Technical Purchasing Requirement document is to provide FOC testing requirements for Non-Concrete Splice Enclosures also referred to as Handholes.

2.0 SCOPE

FOC Products

3.0 REFERENCES

FOC Memo #21	GR902 Handhole Test Punch List
FOC Memo #21	Test GR-902, Test Requirements for Non-concrete Handholes, Rev 2
FOC Memo #21	FOC Memo #21 2005
FOC Memo #37	Power Cross Ignition Test
GR-902-CORE	Generic Requirements for Handholes and Other Below-Ground, Non-Concrete Splice Vaults

4.0 ACRONYMS

FOC	Fiber Optic Components
ITL	Independent Testing Laboratory

5.0 TEST REQUIREMENTS FOR NON-CONCRETE SPLICE ENCLOSURES (HANDHOLES)

Verizon is considering using Non-Concrete Splice Enclosures (Handholes) for buried applications. The following table defines the test requirements for qualifying these units. All the testing must be completed by a Verizon approved ITL.

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FOC Test Program for Handhole Non-Concrete Splice Enclosures also referred to as Handholes		
Task Name	**Samples**	**Comments**
Section 2.1-2.3	All	As Listed in GR-902
3.1 Product Samples	All	As Listed in GR-902
3.2 Product Changes	All	As Listed in GR-902
3.3 Safety and Reliability	All	As Listed in GR-902
3.4 Metallic Materials	All	See Salt Fog
3.5 Plastic and Other Non-Metallic Materials		As Listed in GR-902
Chemical Resistance	30 Test Bars/ Material	As Listed in GR-902
Flammability	3 Samples/ Material	As Listed in GR-902
Fungus	3 Test Bars/ Material	As Listed in GR-902
Seals	All	As Listed in GR-902
UV Testing (exterior plastic components)	12 Test Bars/ Material	As Listed in GR-902
3.6 Fault Location	All	As Listed in GR-902
3.7 Hardware	All	As Listed in GR-902
3.8 Design Features	All	As Listed in GR-902
R3-28, Rockwell Hardness	3 Test Bars/ Material	As Listed in GR-902
3.9 Security	All	As Listed in GR-902
R3-43 and R3-44, Torque	All	As Listed in GR-902
3.10 Bonding and Grounding	A	N/A - No bonding grounding hardware provided
3.11 Documentation	All	As Listed in GR-902
3.12 Marking, Packaging and Shipping	All	As Listed in GR-902
3.13 Installation and Maintenance	All	As Listed in GR-902
3.14 Quality		As Listed in GR-902
3.15 Fire Resistance	B	Straw shall be placed around the handhole as indicated and with only 1/2 inch of straw placed on the handhole cover

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FOC Test Program for Handhole Non-Concrete Splice Enclosures also referred to as Handholes		
Task Name	**Samples**	**Comments**
3.16 Power Cross	B	Nonmetallic non-concrete splice closure housings shall not ignite or be damaged to the extent that working circuits within the housing will be damaged or disrupted when a No. 12 AWG wire conducting 200 amperes is dropped across the non-concrete splice closure housing. Test Procedure - A No. 12 AWG wire conducting 200 amperes shall be dropped across the non-concrete splice closure for the period of time until the wire fuses. Check for evidence of damage that would disrupt telecommunication service. Discussion: In wording of the requirement to make the discussion of ignition of the test sample more clear I would suggest the including brackets in the sentence as noted below. Nonmetallic non-concrete splice closure housings shall not (ignite or be damaged to the extent) that working circuits within the housing will be damaged or disrupted when a No. 12 AWG wire conducting 200 amperes is dropped across the non-concrete splice closure housing. This perhaps would better indicate the intention of the requirement that any ignition should be such that it does not damage the integrity of the hand hole. The hand hole should self extinguish as well. When you see a video of the test you will see a small fire on the hand hole as the test is being conducted. Those familiar with the test will know that this is actually the number 12 AWG wire that has caught on fire as a result of the applied current. The wire will continue to burn and then leave a melt mark into the plastic. The hand hole plastic should hopefully contribute little to this flame.
3.17 Salt Fog	B	As Listed in GR-902
3.18 Handling Shock	B	As Listed in GR-902
3.18.1 Accelerated Thermal Aging	B	As Listed in GR-902
Cover Abuse Test	All	The cover and all associated securing hardware shall be torqued to 30 in/lbs. The hardware shall be untorqued and opened then closed. This constitutes one cycle. This procedure shall be repeated for a total of 50 cycles. There shall be no damage that would effect proper operation or security of the handhole. These samples shall then be subjected to the Thermal Shock Test of section 3.18.2
3.18.2 Thermal Shock	C	As Listed in GR-902
3.18.3 Freeze Thaw	C	As per Verizon's Freeze/Thaw Procedure, defined in GR-771 TPR
3.19 Loading	C	As Listed in GR-902

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FOC Test Program for Handhole Non-Concrete Splice Enclosures also referred to as Handholes		
Task Name	**Samples**	**Comments**
3.19.3 Non-Continuous Vehicular Traffic Load	C	As Listed in GR-902
3.19.3.1 Vertical Cover Load	C	As Listed in GR-902
3.19.3.2 Vertical Side Load	D	As Listed in GR-902
3.19.3.3 Lateral Sidewall Load	E	As Listed in GR-902
3.19.3.4 Long Term Lateral Sidewall Load	E	As Listed in GR-902
3.19.4 Pedestrian Light Incidental Traffic	F	As Listed in GR-902
3.19.4.1 Vertical Cover Load	F	As Listed in GR-902
3.19.4.2 Vertical Side Load	F	As Listed in GR-902
3.19.4.3 Lateral Sidewall Load	F	As Listed in GR-902
3.19.4.4 Long Term Lateral Sidewall Load	F	As Listed in GR-902
3.19.5 Greenways	A	As Listed in GR-902
3.19.5.1 Vertical Cover Load	A	As Listed in GR-902
3.19.5.2 Vertical Side Load	A	As Listed in GR-902
3.19.5.3 Lateral Sidewall Load	A	As Listed in GR-902
3.19.5.4 Long Term Lateral Sidewall Load	A	As Listed in GR-902
Samples:		
A	2 Complete Units	
B	2 Complete Units	
C	2 Complete Units	
D	2 Complete Units	
E	2 Complete Units	
F	2 Complete Units	

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