



**Verizon NEBS™ Compliance: NEBS  
Requirements By Location**  
Verizon Technical Purchasing Requirements  
VZ.TPR.9203  
**Issue 6, February 2012**





**CHANGE CONTROL RECORD:**

<b>Version</b>	<b>Date</b>	<b>Action*</b>	<b>Reason for Revision</b>
1	2/6/2007	Reissue	SIT.NEBS.RQS.NPI.2005.031, reissued and updated into new format, original issue date 11/14/2005.
2	2/5/2009	Change	Removed Wall-Mounted Criteria from SHE/VHO Criteria
3	3/6/2009	Add	Update Table to include VzW MTSO / BTS
4	3/23/2009	Add	Update Table to include VZ.TPR.9205
5	5/13/2011	Add	Update table to expand VzW locations
6	2/2/12	Change	Editorial corrections

\* New, Add, Delete, Change, Reissue

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## 1.0 PURPOSE

The purpose of this Verizon Technical Purchasing Requirement document is to outline the minimum requirements for NEBS testing based on location. Verizon designates which NEBS tests are applicable based on the location the equipment is deployed.

## 2.0 SCOPE

This Technical Purchasing Requirement document provides a matrix of NEBS requirements by location.

The NEBS requirements, to which has been added UL 60950 and VZ.TPR.9205, are organized by sections from GR-63-CORE and GR-1089-CORE.

Most equipment in Verizon can be designated as being deployed to one of the following seven general types of locations: Central offices (including controlled environmental vaults, CEVs); Collocation equipment areas; Data centers; Video equipment centers; Test lab centers, Customer premises (residential) and; VzW MSC/Hub/Cell/NEC.

The “punchlist” of tests contained herein shall be used by equipment suppliers and the Verizon approved Independent Testing Laboratories as a baseline of test requirements to create NEBS Test Plans. In all instances of test planning and test execution, the most recent and accepted versions of the GR standards shall be used.

Verizon reserves the right to modify this or other policies to meet the needs of the business.

## 3.0 REFERENCES

<b>GR-63-CORE</b>	NEBS™ Requirements: Physical Protection
<b>GR-487-CORE</b>	Generic Requirements for Electronic Equipment Cabinets
<b>GR-1089-CORE</b>	Electromagnetic Compatibility and Electrical Safety
<b>NDIR431</b>	Reliability of Network Element and Energy Efficiency Requirements
<b>UL 60950</b>	Safety for Information Technology Equipment
<b>VZ.TPR.9205</b>	Energy Efficiency Requirements for Telecommunications Equipment



#### 4.0 ACRONYMS

<b>AC</b>	Alternating Current
<b>BTS</b>	Base Transceiver Station
<b>CEV</b>	Controlled Environmental Vault
<b>CFR</b>	Code of Federal Regulations
<b>CLEC</b>	Competitive Local Exchange Carrier
<b>CO</b>	Central Office
<b>CPE</b>	Customer Premises Equipment
<b>DC</b>	Direct Current
<b>Doc.</b>	document
<b>EMI</b>	Electromagnetic Interference
<b>FCC</b>	Federal Communications Commission
<b>GR</b>	Generic Requirement
<b>ITL</b>	Independent Testing Laboratory
<b>MSC</b>	Mobile Switching Center
<b>NEBS</b>	Network Equipment-Building Systems
<b>NEC</b>	Network Equipment Center
<b>SHE</b>	Super Head End
<b>SIT</b>	Systems Integration & Testing
<b>Temp</b>	temperature
<b>VHO</b>	Video Hub Office
<b>VZ</b>	Verizon
<b>VzW</b>	Verizon Wireless

#### 5.0 DEFINITIONS

CLEC – Minimal requirements for equipment safety, applied to equipment installed in Verizon locations but owned and operated by CLEC.

Code R – NEBS criteria that generally address reliability of equipment.

Code S – NEBS criteria that generally address equipment safety.

Punchlist – A matrix of test requirements



## **6.0 GENERAL REQUIREMENTS**

For network equipment to be acceptable for deployment in Verizon, it must meet the applicable NEBS criteria. Since NEBS test requirements are influenced by the deployment locations, Verizon has reviewed the different categories of deployment locations and detailed the different requirements applicable to those locations in the following matrix.

**Note** – Equipment cabinets intended for outdoor deployments shall meet all applicable requirements in GR-487-CORE.



**Table 1 – Requirements by Location - Wireline**

NEBS Doc.	CODE	Central Office	CLEC (VZ CO)	Data Centers	SHE / VHO	SIT Lab Entry	Customer Premises (Residential)
GR-63 Issue 3	S	2.0 Spatial					
	R	4.1.1 Transportation & Storage					
	R	4.1.2 Operating Temp & Relative Humidity					4.1.2 Operating Temp & Relative Humidity
	R	4.1.3 Altitude					4.1.3 Altitude
	R	4.1.4 Hi-Temp Margin					
	R	4.1.5 Fan Cooling					
	R	4.1.6 Heat Dissipation	4.1.6 Heat Dissipation				
	S	4.1.7 Surface Temp					4.1.7 Surface Temp
	S	4.2 Fire Resistance	4.2 Fire Resistance	4.2 Fire Resistance	4.2 Fire Resistance	4.2 Fire Resistance	4.2 Fire Resistance
	R	4.3 Eqmt Handling					
	S	4.4.1 Earthquake	4.4.1 Earthquake	4.4.1 Earthquake	4.4.1 Earthquake		
	S	4.4.2 Framework and Anchor	4.4.2 Framework and Anchor	4.4.2 Framework and Anchor	4.4.2 Framework and Anchor		
	S	4.4.3 Wall-Mounted Anchors	4.4.3 Wall-Mounted Anchors	4.4.3 Wall-Mounted Anchors			
	R	4.4.4 Office Vibration					
	R	4.4.5 Transportation Vibration					
	R	4.5 Airborne Contaminants					
S	4.6 Acoustic Noise	4.6 Acoustic Noise					
R	4.7 Illumination						
UL 60950	S						* All Parts
GR-1089 Issue 4	R	2 ESD/EFT Immunity					
	S	3.2 EMI Emission	3.2 EMI Emission	3.2 EMI Emission	3.2 EMI Emission	3.2 EMI Emissions	* FCC Emissions (CFR Title 47, Part 15)
	R	3.3 EMI Immunity		3.3 EMI Immunity			3.3 EMI Immunity
	R	4 Lightning and AC Power Fault (1st Level)		4 Lightning and AC Power Fault (1st Level)			
	S	4 Lightning and AC Power Fault (2nd Level)	4 Lightning and AC Power Fault (2nd Level)	4 Lightning and AC Power Fault (2nd Level)	4 Lightning and AC Power Fault (2nd Level)		4 Lightning and AC Power Fault
	R	5 Steady State Power Induction					
	R	6 DC Potential					
	S	7 Electrical Safety	7 Electrical Safety	7 Electrical Safety	7 Electrical Safety	7 Electrical Safety	7 Electrical Safety
	R	8 Corrosion					
	S	9 Bonding and Grounding	9 Bonding and Grounding	9 Bonding and Grounding	9 Bonding and Grounding	9 Bonding and Grounding	
R	10 DC Power Ports						
VZ.TPR.9205 TEEER		Applicable Sections	Applicable Sections	Applicable Sections	Applicable Sections	Applicable Sections	Applicable Sections



**Table 2 – Requirements by Location - Wireless**

NEBS Doc.	CODE	VzW MSC	VzW Hub	VzW Cell Site	VzW NEC
GR-63 Issue 3	S	2.1 Spatial General Requirements	2.1 Spatial General Requirements	2.1 Spatial General Requirements	
	S	2.2.2 Equipment Frame Dimensions			
	S	2.2.3 Equipment Frame Conform			
	S	2.2.5 AC Convenience Outlets			
	S	2.4 DC Power Plant Equipment			
	R	4.1.1 Transportation & Storage			
	R	4.1.2 Operating Temp & Relative Humidity	4.1.2 Operating Temp & Relative Humidity	4.1.2 Operating Temp & Relative Humidity	
	R	4.1.3 Altitude	4.1.3 Altitude	4.1.3 Altitude	
	R	4.1.4 Hi-Temp Margin	4.1.4 Hi-Temp Margin		
	R	4.1.5 Fan Cooling	4.1.5 Fan Cooling	4.1.5 Fan Cooling	
	R	4.1.6 Heat Dissipation			
	S	4.1.7 Surface Temp			
		4.2.2 Equipment Assembly Fire Test	4.2.2 Equipment Assembly Fire Test	4.2.2 Equipment Assembly Fire Test	
	S	4.2.3 Fire-Resistant Materials	4.2.3 Fire-Resistant Materials	4.2.3 Fire-Resistant Materials	
	R	4.3 Eqmt Handling	4.3 Eqmt Handling		
	S	4.4.1 Earthquake	4.4.1 Earthquake	4.4.1 Earthquake	
	S	4.4.2 Framework and Anchor	4.4.2 Framework and Anchor	4.4.2 Framework and Anchor	
	S	4.4.3 Wall-Mounted Anchors	4.4.3 Wall-Mounted Anchors	4.4.3 Wall-Mounted Anchors	
	R	4.4.4 Office Vibration	4.4.4 Office Vibration	4.4.4 Office Vibration	
	R	4.4.5 Transportation Vibration	4.4.5 Transportation Vibration		
R	4.5 Airborne Contaminants	4.5 Airborne Contaminants	4.5 Airborne Contaminants		
S	4.6 Acoustic Noise				
R	4.7 Illumination				



NEBS Doc.	CODE	VzW MSC	VzW Hub	VzW Cell Site	VzW NEC
<b>GR-1089 Issue 4</b>	<b>R</b>	2.1 Electrostatic Discharge	2.1 Electrostatic Discharge	2.1 Electrostatic Discharge	
	<b>R</b>	2.2 Electrical Fast Transient	2.2 Electrical Fast Transient		
	<b>S</b>	3.2 EMI Emission	3.2 EMI Emission	3.2 EMI Emission	
	<b>R</b>	3.3 EMI Immunity	3.3 EMI Immunity	3.3 EMI Immunity	
	<b>R</b>	4 Lightning and AC Power Fault	4 Lightning and AC Power Fault	4 Lightning and AC Power Fault	
	<b>R</b>	4.6 Interfacing w/ Telco Ports			
	<b>R</b>	4.8 Interfacing Primary Protect			
	<b>R</b>	4.9 Integrated Primary Protect			
	<b>R</b>	4.10 Interfacing w/ Coaxial	4.10 Interfacing w/ Coaxial	4.10 Interfacing w/ Coaxial	
	<b>R</b>	4.11 Interfacing w/ Antennas			
	<b>R</b>	4.12 Interfacing w/ AC Power			
	<b>R</b>	4.13 Interfacing w/ DC Power			
	<b>R</b>	5 Steady State Power Induction	5 Steady State Power Induction	5 Steady State Power Induction	
	<b>R</b>	6 DC Potential	6 DC Potential	6 DC Potential	
	<b>S</b>	7 Electrical Safety	7 Electrical Safety	7 Electrical Safety	
<b>R</b>	8 Corrosion	8 Corrosion	8 Corrosion		
<b>S</b>	9 Bonding and Grounding	9 Bonding and Grounding	9 Bonding and Grounding		
<b>R</b>	10 DC Power Ports				
<b>VZ.TPR.9205 TEEER</b>		Applicable Sections	Applicable Sections	Applicable Sections	Applicable Sections