Boundaries for Arc Flash and Shock - Approach Limits

Based on CSA Z462-2015 and NFPA 70E-2015 Standard Editions

Unqualified Personnel + Arc-Rated PPE, Awareness & Continuously Escorted by a Qualified Person

Arc-Rated PPE Required

Qualified Person
+ Competent for Work Task
+ Risk Assessment Procedure
+ Arc Flash Risk Assessment
(Incident Energy Calculations or Arc Flash PPE Category Table Method)
+ Approved Work Procedure
+ EEWP if required
+ Arc-Rated PPE appropriate & suitable for the work task

Arc Flash Boundary

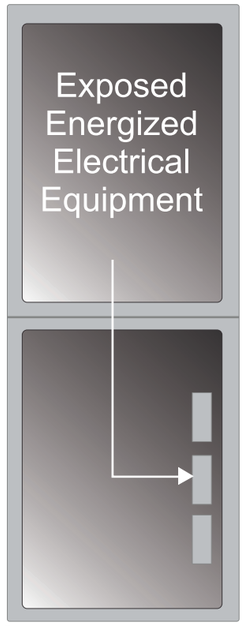
Qualified Person
+ Competent for Work Task
+ Risk Assessment Procedure
+ Shock Risk Assessment

Limited Approach Boundary for Shock

No Unqualified Personnel Allowed!

Qualified Person
+ Competent for Work Task
+ Contact Work Justification
+ Risk Assessment Procedure
+ Arc Flash Risk Assessment
+ Shock Risk Assessment
+ Approved Work Procedure
+ EEWP if required
+ Shock PPE, Tools & Equipment appropriate & suitable for the work task

Restricted Approach Boundary for Shock



1.2 cal/cm² Onset of 2nd Degree Skin Burn

Arc Flash Boundary → **Higher Risk of Shock**

ESPS Electrical Safety Program Solutions INC.

Calgary, Alberta, Canada
www.esps.ca

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ARC FLASH & SHOCK SOLUTIONS

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Detailed Arc Flash and Shock Warning Label Example

⚠ WARNING

Arc Flash & Shock Hazard

ARC FLASH PROTECTION		SHOCK PROTECTION	
Working Distance	**18 inches**	Shock Hazard when covers removed	**600 VAC**
Incident Energy	**5.0 cal/cm²**	Limited Approach	**42 inches**
Arc Flash Boundary	**43 inches**	Restricted Approach	**12 inches**
<Company> PPE Level =	**2**	Rubber Insulating Glove Class	**0**
Refer to <Company>'s Electrical Safety Program for Arc Flash PPE requirements.			

Location: MCC #1 Building
Equipment: LOAD SIDE of **MCC #1 MAIN BREAKER**
Report #: ESPS-XXX-YYY-AHA-ZZZ Rev 1.0

Study provided by: ESPS
Date: **2015-01-08**
Label #: 1

Approach Boundaries to Energized Electrical Conductors or Circuit Parts for Shock Protection for AC Systems

System Voltage	Limited Approach Boundary	Restricted Approach Boundary
< 50V	Not specified	Not specified
120V	3 ft. 6 in. / 1.0 m	Avoid contact
208V - 600V	3 ft. 6 in. / 1.0 m	1 ft. 0 in. / 0.3 m
4,160V	5 ft. 0 in. / 1.5 m	2 ft. 2 in. / 0.7 m
13,800V	5 ft. 0 in. / 1.5 m	2 ft. 2 in. / 0.7 m

This material is not all-inclusive and users shall refer to the Standard for requirements

Arc Flash & Shock PPE, Training, Programs & Resources go to: www.unlimitedppe.com