LP/GTM

PROJECTS

HAND PROTECTION

SPECIFICATIONS

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Signature

Document Number	
Release Date	April 9, 2019
Revision	1.0
Retention Date	2 years (or upon review)
Confidentiality	Not Confidential

Document History

Version	Date	Author	Change Description
1.0	April 9, 2019	Rick Landry	Document created

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1 Introduction

Hand protection shall be worn at all times on Company worksites. Hand protection shall be appropriate to the task being performed and include consideration of factors such as abrasion, dexterity, punctures and sharp edges, chemicals, crushing, temperature (hot and cold), vibration and general duty. As a general rule, anytime standard PPE (Hardhat, safety glasses, high-vis vest, safety boots) is donned gloves must be worn.

2 Documentation

Hand injury prevention shall be included as part of the Contractor Safe Work Plan/Project Specific Safety Plan.

- This plan shall include:
  - Glove selection based on contractor hazard assessment;
  - Minimum requirement of glove use;
  - Minimum training requirements;
  - Communication and promotion of protective gloves;
  - Selection, care, use, limitations, brand and type of protective gloves including glove rating, taking into consideration size, dexterity, weather conditions, etc.

3 Training

Hand injury prevention will be included as part of the contractor's project orientation and at a minimum shall include:

- Hand injury prevention video(s) or live demonstration(s) showing hand injury prevention methods and techniques;
- Hierarchy of controls related to hand injury prevention;
- PPE - types of gloves, limitations, selection based on hazard assessment, etc.;
- Minimum requirements.

4 Minimum Expectations

General

For the majority of the activities on Company projects, impact protective gloves containing cut, abrasion, and puncture resistance specification below will be required.

Gloves must:

- Permit moderate dexterity, or better;
- Contain at a minimum, impact absorption material on backhand, knuckles and fingers;
- Contain palm and finger materials made of or coated with grip promoting material;
- Be 'impact rated' by the manufacturer or contain EN388 Impact Protection rating.
- The puncture resistance rating must be commensurate with the anticipated highest likely puncture hazard determined by the Contractor hazard assessment.

5 Protective Gloves Specification

This section contains information on other types of gloves permitted based on the type of task and determined by the contractor's hazard assessment.

Mechanical Protection

- Cut Resistance: All gloves used by workers on the project shall meet the minimum specification:
  - ANSI/ISEA 105-2016 Standard CUT Level A5, or;
  - EN388 2016 Standard Rating Level E/ Level 5 (Coup test, pre-2016).

Impact Protection:

All general work gloves used by workers on the project, where fine dexterity, live electrical work, chemical, or heat protection are not a factor must contain impact protection.

Impact Protective Gloves must:

- Permit moderate dexterity, or better.
- Contain at a minimum, impact absorption material on backhand, knuckles and fingers.
- Palm and finger materials are to be made of or coated with grip promoting material.
- Be 'impact rated' by the manufacturer or contain EN388 Impact Protection rating.
- The puncture resistance rating must be commensurate with the anticipated highest likely puncture hazard determined by the Contractor hazard assessment.

Puncture Resistance:

Generally, protective gloves meeting the minimum cut resistance specification will have inherent puncture resistant qualities.

- When puncture-type hazards are identified by the contractor's hazard assessments(s) or are apparent at the workface, a glove that is puncture resistant rated by the manufacturer is required.
- The puncture resistance rating must be commensurate with the anticipated highest-likely puncture hazard determined by the contractor's hazard assessment.
- If undetermined by the contractor's hazard assessment, all gloves with EN 388 markings, puncture resistance must be at a minimum rated a Level 3 or higher. This rating is also adopted and harmonized by ANSI ISEA for ease of administration.

Abrasion Resistance:

- Similar to puncture resistance, protective gloves meeting the minimum cut resistance specification (A5/ Level E) are comprised of abrasion resistant qualities, often rated at EN388 Level 4. The minimum abrasion resistance of gloves must be EN388 Level 4.

Chemical Protection

Chemically Impervious Gloves-

Glove ratings must be commensurate with the highest anticipated chemical hazard determined by the appropriate SDS' and by the contractor's hazard assessment.

- Administrative controls must be identified to determine duration of worker exposure and suitability of gloves to remain effective for this duration.
- Chemically impervious gloves must be paired with a liner that meets cut resistance specifications.

Thermal Protection

The contractor hazard assessment must contain identified hazards and control measures for known or potential exposure to this energy source. At a minimum, the gloves must provide adequate worker protection from the highest anticipated temperature or hazard.

- For welders, gloves must provide suitable protection from heat, flames, sparks, and weld spatter.
- For welding, the primary consideration will be worker protection from thermal/welding hazards. Welders are not required to meet mechanical hazard protective glove specifications unless the contractor's hazard assessment has deemed it necessary.
- Thermal protection gloves must contain a minimum 5" cuff for coverage and protection of wrists

Electrical Protection (Potential for Energized Contact)

Voltage Rated Gloves- the contractor hazard assessment must contain identified hazards and control measures for known or potential exposure to this energy source. At a minimum, the gloves must provide adequate worker protection from the highest anticipated electrical hazard.

- Voltage Rated Gloves must be worn that are the appropriate class for the voltage.
- Higher-class voltage rated gloves with leather protectors provide increased arc flash protection due to the increase in material thickness.
- When working with voltage, the primary consideration will be worker protection from this energy source. Electrical workers are not required to meet mechanical hazard protective glove specifications unless the contractor's hazard assessment has deemed it necessary.
- Electrical workers completing certain tasks related to new construction where voltage is not present (as determined by the contractor hazard assessment) will be required to wear gloves that meet the mechanical hazard protective glove specifications.

6 Exception To Hand Protection Specification

Whenever possible, the Company projects will exercise reason with expectations to PPE use. There are instances where removal of PPE may be necessary. This portion of the Safe Work Permit (SWP) contemplates the scenarios when a worker can deviate from the minimum specification outlined in this document. A granted exception shall always be in compliance with applicable legislation.

7 Exempted Work Types

Administrative Tasks/ Instrument Use:

When it is deemed necessary to remove gloves for an administrative task while on the ROW, or to operate an instrument where fine dexterity is needed and the risk of injury to hands is not reasonably present; protective gloves may be temporarily removed. It is expected that workers will have the gloves with them and be prepared to don them while not executing the exempted task.

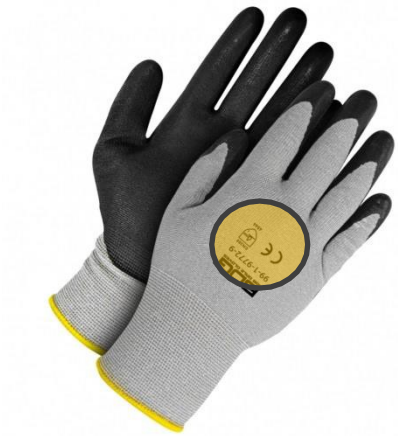
8 References

- ANSI/ISEA 105-2016 American National Standard for Hand Protection Classification
- BS EN 388:2016 Protective gloves against mechanical risks

Appendix A:
MARKING AND RATING IDENTIFICATION - PROTECTIVE GLOVES

The EN388 Marking

- 4 numerical values denote the ratings based on testing for each feature.
- Newer gloves will contain the two alphabetical ratings used for Cut Resistance and Impact Protection.
- This is the most common marking on most gloves.



	Rating
Abrasion	1-4
Cut (Coup Test)	1-5
Tear	1-4
Puncture	1-4
Cut (TDM-100 Test)	A-F
Impact Protection	P

For illustrative purposes, the EN 388 marking above would exactly meet the minimum requirements of this Safe Work Specification.

ANSI/ISEA Markings 2016 to Present

- A single marking that indicates Cut Resistance will be indicated on the glove. Current markings are identified by the presence of 'A' before the numerical rating

ANSI/ISEA Markings Pre- 2016

- A single marking that indicates Cut Resistance will be indicated on the glove. Pre-2016 markings are identified by the ***absence*** of 'A' before the numerical rating.
- Cut 5 rated gloves meet the minimum acceptable specification although the performance functionality of the glove at this rating may be inferior when compared to newer gloves.

Figure 1-1 ***EN 338 2016 to ANSI/ISEA 105 Standard Conversion for Cut Resistance***

	EN 388 RATING	RANGE (NEWTONS)	CONVERTED RANGE (GRAMS)	ANSI/ISEA 105 LEVEL	RANGE (GRAMS)
Generally *NOT* permitted on project.	A	2 - 4.9	204 - 508	A1	200 - 499
	B	5 - 9.9	509 - 1,019	A2	500 - 999
	C	10 - 14.9	1,020 - 1,529	A3	1,000 - 1,499
	D	15 - 21.9	1,530 - 2,242	A4	1,500 - 2,199
ACCEPTABLE Cut Resistance	E	22 - 29.9	2,243 - 3,058	A5	2,200 - 2,999
	F	30+	3,059+	A6	3,000 - 3,999
	---	---	---	A7	4,000 - 4,999
	---	---	---	A8	5,000 - 5,999
	---	---	---	A9	6,000+

Source: www.pipglobal.com

Figure 1-1 depicts the comparable and accepted marking ratings of cut resistance required for Company projects work. Protective gloves that bear the rating in the green shaded area meet the project requirement.