Ironworker (Generalist) (2026) Level 2

ACRONYMS AND ABBREVIATIONS

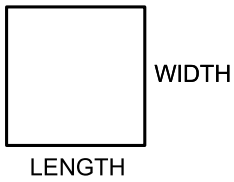
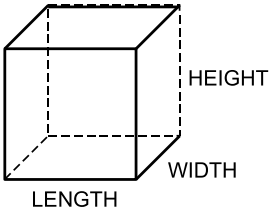
TERM	MEANING
AC	alternating current
AESS	architecturally exposed structural steel
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWS	American Welding Society
BLL	bottom lower layer
BUL	bottom upper layer
CSA	Canadian Standards Association
CWB	Canadian Welding Bureau
D/d	Diameter to diameter
DC	direct current
DCEN	direct current electrode negative
DCEP	direct current electrode positive
DCRP	direct current reverse polarity
DCSP	direct current straight polarity
EW	each way
FCAW	flux core arc welding
GMAW	gas metal arc welding
H_2S	Hydrogen sulfide
HSS	hollow structural section
RFI	request for information
RSIC	Reinforcing Steel Institute of Canada
SAW	submerged arc welding
SCBA	self-contained breathing apparatus
SMAW	shielded metal arc welding
SW	stud welding
TC	tension control
TLL	top lower layer
TUL	top upper layer
UNO	unless noted otherwise
WLL	working load limit

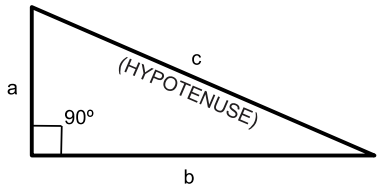
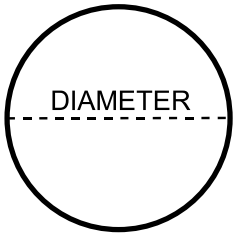
UNITS OF MEASUREMENT

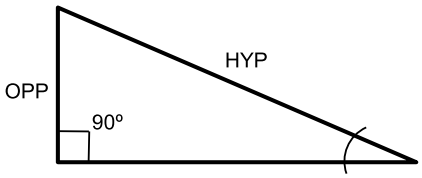
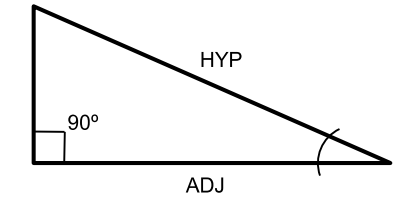
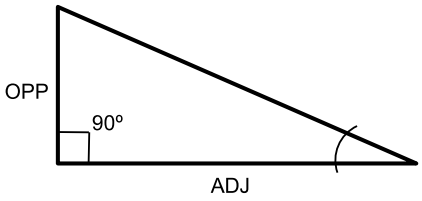
TERM	MEANING
°	degree
A	ampere
ft.	foot
in.	inch
kg	kilogram
lb.	pound
m	metre
m^2	square metre
mm	millimetre
MPa	megapascal
PSF	pounds per square foot
psi	pounds per square inch

NOTE Do **not** bring this document to your exam.
These acronyms and abbreviations will be included in the exam reference materials.

FORMULAS

 $Area\ (in\ square\ units) = L \times W$	 $Volume\ (in\ cubic\ units) = L \times W \times H$
$Force = area \times pressure$	$Tension = \frac{weight}{number\ of\ slings} \times \frac{length\ of\ sling}{vertical\ length}$

	$Missing\ side\ (in\ linear\ units) = a^2 + b^2 = c^2$ or $Missing\ side\ (in\ linear\ units) = c^2 - b^2 = a^2$
	$Radius\ (r) = \frac{Diameter}{2}$ $Circumference\ (in\ linear\ units) = \pi \times diameter$ $Area\ (in\ square\ units) = \pi \times radius^2$

	Using SINE $Angle\ SIN \times HYP = OPP$ $OPP \div Angle\ SIN = HYP$ $OPP \div HYP = Angle\ SIN^{-1}$
	Using COSINE $Angle\ COS \times HYP = ADJ$ $ADJ \div Angle\ COS = HYP$ $ADJ \div HYP = Angle\ COS^{-1}$
	Using TANGENT $Angle\ TAN \times ADJ = OPP$ $OPP \div Angle\ TAN = ADJ$ $OPP \div ADJ = Angle\ TAN^{-1}$

Material	**Imperial unit weight**	**Metric unit weight**
Steel	490 lb./ft^3	7,850 kg/m^3
Brick	110 – 140 lb./ft^3	1,762 – 2,243 kg/m^3
Reinforced Concrete	150 lb./ft^3	2,405 kg/m^3

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