

THEORY PRESENTATION TOPIC:




EN892 Dynamic ropes

Unit of competency:

SISOCLN303A, SISOCLN411A, SISOCLN512A
SISOCLA406A, SISOCLA409A



Name of Candidate:	
Assessment Date:	
Site:	
Industry context of lesson	<input type="checkbox"/> Outdoor rec <input type="checkbox"/> Public safety <input type="checkbox"/> Industrial roping
Stated Lesson Time Frame	(+/- 10 min leeway either side)
Start Time:	
Finish Time:	

	KEY PERFORMANCE CRITERIA	Assessor Remarks	C / NYC
1	Lesson topic is identified		
2	Reason for learning is given <input type="checkbox"/> Stated reason(s) motivates students to be attentive and receptive to learning <input type="checkbox"/> Stated reason(s) is realistic for the industry context		
3	History / development: <input type="checkbox"/> prior to development of nylon, vegetable fibre ropes were used (eg hemp) <input type="checkbox"/> nylon invented by Wallace Carothers on 28 Feb 1935 (while working for DuPont) <input type="checkbox"/> nylon is a polymer (type 6,6) <input type="checkbox"/> first nylon kernmantel rope made by 'Edelrid' in 1953 (a German company)		
4	Structure of a dynamic rope: <input type="checkbox"/> contrast differences between low-stretch & dynamic ropes <input type="checkbox"/> core + sheath construction (kernmantel) <input type="checkbox"/> S and Z twist in rope fibres <input type="checkbox"/> acts like a coiled up spring		
5	Standards for manufacturers: <input type="checkbox"/> EN892 <input type="checkbox"/> UIAA 101 <input type="checkbox"/> relevance of standards to climbers		
6	Three (3) categories are explained: <input type="checkbox"/> single  <input type="checkbox"/> half  <input type="checkbox"/> twin  <input type="checkbox"/> examples of how each rope category is used is given		
7	Drop test criteria: <input type="checkbox"/> single: 80kg x 5 falls (1 st fall ≤12kN impact force) <input type="checkbox"/> half: 55kg x 5 falls (1 st fall ≤8kN impact force) <input type="checkbox"/> twin: 80kg x 12 falls (1 st ≤12kN impact force) <input type="checkbox"/> fall-factors (testing is at factor 1.71) <input type="checkbox"/> 2.8m sample of rope dropped 4.8m		
8	Effects of water: <input type="checkbox"/> 2006 paper by Karen Andrew – university of Strathclyde, Glasgow UK - reference <input type="checkbox"/> ordinary (non-treated) nylon is 'hydrophilic' <input type="checkbox"/> water causes non-treated ropes to 'plasticise' <input type="checkbox"/> 'plasticising' reverses when ropes dry but, the effect can become permanent if <i>too many</i> wetting/drying cycles (report suggests 32% strength loss after 16+ cycles) <input type="checkbox"/> 'dry treated' ropes (benefits?) <input type="checkbox"/> salt water – sea cliffs (effects?)		

	KEY PERFORMANCE CRITERIA	Assessor Remarks	C / NYC
9	Effects of loading over sharp edges: <input type="checkbox"/> what effect can a sharp edge have? <input type="checkbox"/> are climbing ropes rated/certified for falls over sharp edges? <input type="checkbox"/> cut resistance is inversely proportional to frictional heating introduced at point of contact (ref 2017 paper by Leal, Stampfli, and Hufenus) <input type="checkbox"/> UIAA 108 standard was suspended in July 2004 <input type="checkbox"/> UIAA 101 (clause 3.3) now tests energy absorption over an edge		
10	Rules for retirement: <input type="checkbox"/> 10 years (theoretical maximum) <input type="checkbox"/> exposure to acid liquid / acid fumes <input type="checkbox"/> core exposed (color of core?) <input type="checkbox"/> arrested severe fall (high impact force)		
11	Care and maintenance: <input type="checkbox"/> how to wash (permissible cleaning fluids) – limit washing... only if absolutely required <input type="checkbox"/> wet ropes – air dry naturally in shade (not in direct strong sunlight) <input type="checkbox"/> don't leave ropes setup in the natural elements for extended periods (ropes are UV stabilised since 1970's...but, <i>intense</i> UV will degrade ropes) <input type="checkbox"/> tips to keep ropes clean (eg ground sheet) <input type="checkbox"/> avoid standing on ropes		
12	Conclusion / Summary: <input type="checkbox"/> key topics discussed are briefly summarised <input type="checkbox"/> students are advised that the lesson has concluded <input type="checkbox"/> any questions?		

Automatic NYC criteria:

1. Inaccurate information that would lead to serious injuries or death
2. Technical inaccuracies that are not insignificant
3. Content delivered did not fulfil learning objectives
4. Disorganised and/or chaotic lesson structure
5. Significant deviation from stated lesson time frame (more than 30% over or under)
6. Information presented would cause considerable harm to the reputation of the candidate or PACI.
7. Information presented is of a Defamatory or Discriminatory nature.
8. Equipment design limits would be exceeded – triggering catastrophic system failure.

Qualitative impression of lesson delivery

Poor

 Average

 Outstanding

Assessor comments:

Assessor statement: *I declare that I observed a live presentation given by the candidate. I did not interfere with or subtly provide clues to steer the candidate toward a successful presentation covering all required topics. The presentation given was an example of the candidates current level of knowledge and understanding of the subject material and ability to present information in a coherent manner.*

Assessor signature: _____ Dated: _____

Candidate signature: _____ Dated: _____