Correlation of

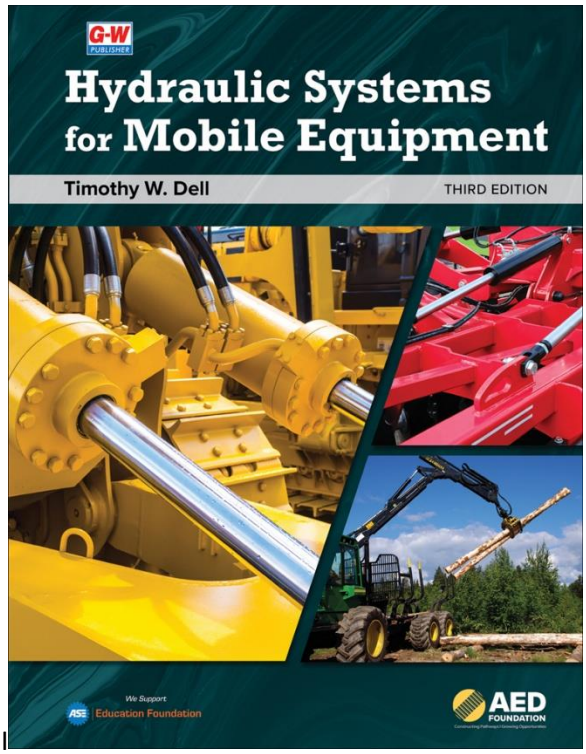
***Hydraulic Systems for Mobile Equipment,* Dell**

(Goodheart-Willcox Publisher ©2027)

to

AED Standards for Construction Equipment Technology: Safety

The following chart correlates the *Hydraulic Systems for Mobile Equipment* ©2027 textbook to the Safety Section of the 2021 AED Standards for Construction Equipment Technology.



Critical Functions	Key Activities	Performance Descriptions	Textbook Content
1a. Safety			
1a.1 Identification and use of basic hand tools			N/A
1a.2 Use of electric hand tools			N/A
1a.3 Use of air tools			N/A
1a.4 Use of hydraulic tools			N/A
1a.5 Use of lifting equipment	I		N/A

Copyright © Goodheart-Willcox Co., Inc. All Rights Reserved. You may not reproduce, create derivative works from, utilize any AI technology with respect to, or allow unauthorized access to, any G-W course or other materials, except as permitted by U.S. copyright law. Such materials may be used for your own educational purposes only, in a location not accessible by the general public.

Correlation of *Hydraulic Systems for Mobile Equipment* to AED Standards for Construction Equipment Technology: Safety—page 2

Critical Functions	Key Activities	Performance Descriptions	Textbook Content
1a.7 Use of fluid pressure testing equipment	Proper and safe use of various types of fluid pressure test equipment and accessories.	Identify and correctly name the various types of fluid pressure test equipment and the accessories required for proper testing.	523–545
	Bench testers and testing equipment such as: a. Gauges b. Transducers, wired and wireless c. Flow rating equipment d. Hydraulic cylinder tests e. Hydraulic pump and motor	Describe the proper use of the designed application and safe operation of each type of equipment.	523–545, 631
		Demonstrates a proper source for calibration of precision test equipment and accessories.	529, 539–540
	Exhibits knowledge of personal protection equipment and hazardous materials – reference section 1a.10.	Identify, correctly name, and demonstrate the use of personal protective equipment required for the various types of fluid pressure testing equipment.	2–3
		Describe multiple dangers of working with fluids under pressure.	7–9
1a.8 Environment of service facility			N/A
1a.9 Machine identification and operation	Proper and safe operation of the machinery the technician will be involved with. Examples: a. Excavators b. Skid steers c. Backhoes	Identify the various types of construction equipment and forklifts, using the standard industry names accepted by equipment manufacturers.	389–390, 400, 421, 439–454, 473–483, 485–496, 498–502, 649–655

Copyright © Goodheart-Willcox Co., Inc. All Rights Reserved. You may not reproduce, create derivative works from, utilize any AI technology with respect to, or allow unauthorized access to, any G-W course or other materials, except as permitted by U.S. copyright law. Such materials may be used for your own educational purposes only, in a location not accessible by the general public.

Correlation of *Hydraulic Systems for Mobile Equipment* to AED Standards for Construction Equipment Technology: Safety—page 3

Critical Functions	Key Activities	Performance Descriptions	Textbook Content
1a.9 Machine identification and operation (cont.)	d. Compaction equipment e. Paving equipment f. Crawlers and track type loaders g. Scrapers h. Cranes i. Scissor lifts j. Forklifts and material handlers k. Wheel loaders l. Haul trucks m. Motor graders n. Trenchers o. Horizontal directional drills	Demonstrates and can explain the proper, safe, and fundamental operation of the various types of machinery.	348–362, 364, 380–424, 425–454, 455–484, 485–505, 506–522
		Translate from a user's perspective the importance of and reasons for caution/warning lights, backup alarms, seat belts, safety instructions, decals, and other customer-related safety information.	N/A
	*****Hybrid Drives*****	Recognize hybrid systems and/or machines as they relate to safety concerns.	285–286
	Exhibits knowledge of personal protection equipment and hazardous materials – reference section 1a.10.		
1a.10 Mandated regulations	Various federal and state OSHA and MSHA regulations.	Identify and correctly name the various types of equipment required for these regulations.	2–6, 12–13
			2–6, 12–13

Copyright © Goodheart-Willcox Co., Inc. All Rights Reserved. You may not reproduce, create derivative works from, utilize any AI technology with respect to, or allow unauthorized access to, any G-W course or other materials, except as permitted by U.S. copyright law. Such materials may be used for your own educational purposes only, in a location not accessible by the general public.

Critical Functions	Key Activities	Performance Descriptions	Textbook Content
1a.10 Mandated regulations (cont.)	a. Personal protection equipment (PPE): • Safety glasses and shoes • Fire protection • Ear protection • Respirators • Head protection • Loose clothing hazard • Proper gloves/hand protection • Protective clothing	Demonstrate and explain the principles and procedures for each of the regulations.	1–17
	b. Hazardous material: • Right-to-know c. Proper handling of hazardous material. d. Lock-out, tag-out as it pertains to construction machinery. e. Proper use of wheel chocks. f. Blood-borne pathogens. g. Confined space regulations. h. Forklift operation and certification.	Demonstrates the operation, inspection, proper care, and maintenance of the various equipment required for conforming with federal and state OSHA and MSHA regulations.	1–17
	i. Fire protection and suppression: • Methods of fire protection • Proper handling of various types of fires; electrical, grease, etc. • Use of fire extinguishers	Identify the different types of fire extinguishers and know the applications and correct use of each type.	3–6, 10–12

Copyright © Goodheart-Willcox Co., Inc. All Rights Reserved. You may not reproduce, create derivative works from, utilize any AI technology with respect to, or allow unauthorized access to, any G-W course or other materials, except as permitted by U.S. copyright law. Such materials may be used for your own educational purposes only, in a location not accessible by the general public.

Critical Functions	Key Activities	Performance Descriptions	Textbook Content
1a.10 Mandated regulations (cont.)	j. Safety Data Sheets (SDS). k. Machine guarding. l. Proper inspection of all electrical tools. Example: Drills and grinders. m. Handling of flammable liquids and materials. n. Handling of machinery with fluid leaks. o. Back-up alarm requirements for construction machinery. p. Rollover protective equipment for construction machinery (ROPS). q. Electrical ground fault protection.	Demonstrate how to find, explain, and use an SDS for a product.	6
	r. Underground utility hazard – standard markings for each type. s. Falling objects protection for construction machinery (FOPS). t. Fall protection for workers. u. Sub-surface, trench, and excavation safety.	Recall and identify underground utility hazard markings that would commonly be encountered on a job site.	N/A
	v. Workman's compensation and accident prevention: 1. Cost of accidents 2. Lost time injury 3. Proper accident and injury reporting	Explain why working safety is important and explain the procedures for reporting unsafe working conditions and practices.	2–3, 6–10, 13–14

Copyright © Goodheart-Willcox Co., Inc. All Rights Reserved. You may not reproduce, create derivative works from, utilize any AI technology with respect to, or allow unauthorized access to, any G-W course or other materials, except as permitted by U.S. copyright law. Such materials may be used for your own educational purposes only, in a location not accessible by the general public.

Correlation of *Hydraulic Systems for Mobile Equipment* to AED Standards for Construction Equipment Technology: Safety—page 6

Critical Functions	Key Activities	Performance Descriptions	Textbook Content
1a.11 Shop and in-field practices	General safe work habits in the shop; general safe work habits when doing in-field repairs or at customer's facility.	Identify safe work practices in each situation.	2–17
		Demonstrate safe work practices in the shop or in the field.	2–17, 127–128, 279–280
	Proper lifting and pulling techniques.	Identify proper lifting and pulling techniques to avoid personal injury.	N/A
		Demonstrate proper lifting and pulling techniques.	N/A
	Proper shop/facility cleanliness and housekeeping practices.	Demonstrate proper shop/facility cleanliness/appearance to dealer standards.	6, 13, 250–251, 261–264, 267–268
1a.12 Hazard identification and prevention	Performing safety risk assessments.	Identify potential hazards and develop a plan to deal with them.	
	Proper mounting and dismounting of machinery.	Demonstrate safe mounting and dismounting practices on construction machinery.	12–14
	Load securement for transportation of components.	Explain proper types of chains and binders used in securing loads.	N/A
	General knowledge of safety practices.	Demonstrate proper lock-out, tag-out procedures.	12–14
	Hazard Communication (HazCom) Standard.	Demonstrate understanding of the HazCom standard and how to use Safety Data Sheets and Chemical Labels.	6, 13–14
	Implement Toolbox Talk, or Safety Share Topic in daily startup.	Write about or discuss from personal or team experience (shop, workplaces, etc.), common safety hazards, and what you would have done to eliminate them.	N/A
	Proper use of jack stands, blocking, and cribbing while working under a machine.		

Copyright © Goodheart-Willcox Co., Inc. All Rights Reserved. You may not reproduce, create derivative works from, utilize any AI technology with respect to, or allow unauthorized access to, any G-W course or other materials, except as permitted by U.S. copyright law. Such materials may be used for your own educational purposes only, in a location not accessible by the general public.

Correlation of *Hydraulic Systems for Mobile Equipment* to AED Standards for Construction Equipment Technology: Safety—page 7

Critical Functions	Key Activities	Performance Descriptions	Textbook Content
1a.12 Hazard identification and prevention	Proper wheel assembly handling procedures.	Demonstrate proper work procedures in handling wheel assemblies safely. Refer to industry standard procedures.	N/A
	Proper tethering techniques.	Identify when tethering is necessary and proper use of the fall protection equipment.	11

Copyright © Goodheart-Willcox Co., Inc. All Rights Reserved. You may not reproduce, create derivative works from, utilize any AI technology with respect to, or allow unauthorized access to, any G-W course or other materials, except as permitted by U.S. copyright law. Such materials may be used for your own educational purposes only, in a location not accessible by the general public.