AD734854

U.S. ARMY TEST AND EVALUATION COMMAND
SYSTEM ENGINEERING TEST OPERATIONS PROCEDURE

AMSTE-RP-702-108
Test Operations Procedure 9-2-046 1 December 1971

CONVEYOR EQUIPMENT

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SECTION I
GENERAL

1. Purpose and Scope. This TOP describes test procedures for evaluating the operational and performance characteristics of conveyor equipment. Equipment covered includes: belt, roller, and roller and wheel conveyors. From the tests listed in Section II, the test director can select those that will satisfy the requirements for the particular test item and the particular test type (i.e., engineering test, initial production test, etc.). This document provides for simulated environmental testing but does not include service or environmental testing at climatic test sites.

2. Background. Conveyor equipment, in general, provides a fast and efficient method of transferring materials (loose bulk or packaged) and is a valuable aid in warehousing, transportation, excavating and aggregate mixing operations. Characteristics found in different types of conveyors are: self-complete, sectionalized units, portability, gravity feed, motorized belt and adjustable elevation. The advent of new or modified equipment necessitates a requirement for a complete evaluation by means of selected engineering tests.

3. Equipment and Facilities. Equipment and facilities required are defined in the documents listed in Section II.

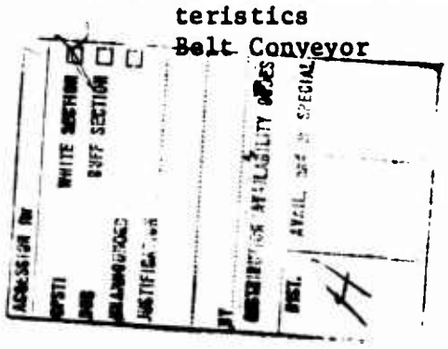
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SECTION II
TEST PROCEDURES

4. Supporting Tests. Common Engineering MTPs/TOPs, Military Standards, and other published documents to be considered in formulating a test plan are as follows:

TEST SUBJECT TITLE	PUBLICATION NO.
a. Preoperational Inspection	10-3-500
(1) Operator Training and Familiarization	10-2-501
(2) Photographic Coverage	7-3-519
b. Physical Characteristics	10-2-500
(1) Magnetic Particle Test	MIL-STD-271D Para 4
(2) Liquid Penetrant	Para 5
c. Safety	10-2-508
d. Performance Tests	
(1) Belt Conveyor	MIL-C-392F Paras 4.6.3.2, 4.6.3.5, 4.6.3.6 MIL-C-11819C Para 4.4.1.1
(2) Roller Conveyor	MIL-C-43528 Para 4.5
(3) Roller and Wheel Conveyor	MIL-C-11218C Para 4.4
e. Environmental Tests	
(1) Temperature	AR 70-38
(2) Sunshine	4-2-826
(3) Rain	2-2-815
(4) Humidity	4-2-820
(5) Fungus	4-2-818
(6) Salt Fog	MIL-STD-810B Method 509
(7) Dust	Method 510
(8) Vibration	4-2-804
(9) Rough Handling	4-2-602
(10) Electromagnetic Interference Characteristics	MIL-STD-461A
Belt Conveyor	Notice 4 MIL-STD-462 Notice 3 Methods CE04, CE05, RE02



	TEST SUBJECT TITLE	PUBLICATION NO.
f.	Transportability	10-2-503
	(1) Packaging	MIL-STD-794B
	(2) Static Test of Tiedown and Lifting Attachments	MIL-C-392F Para 4.6.3.7
	(3) Towing Test	Para 4.6.3.3.1
g.	Human Factors Evaluation	10-2-505
	Noise	HEL-STD S-1-63B
h.	Reliability	MIL-STD-781B Para 5
i.	Durability	10-2-502
j.	Maintenance Evaluation	10-2-507
k.	Value Analysis	USAMC SUPP 1 to AR 11-26

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APPENDIX
REFERENCES

1. AR 70-38, "Research, Development, Test, and Evaluation of Materiel for Extreme Climatic Conditions."

2. USAMC Supplement 1 to AR 11-26, "Value Engineering."

3. HEL-STD S-1-63B, "Maximum Noise Level for Army Materiel Command Equipment."

4. MIL-STD-271D, "Nondestructive Testing Requirements for Metals."

5. MIL-STD-461A, "Electromagnetic Interference Characteristics, Requirements for Equipment", including notices 1 thru 4.

6. MIL-STD-462, "Electromagnetic Interference Characteristics, Measurement of", including notices 1 thru 3.

7. MIL-STD-781B, "Reliability Tests: Exponential Distribution", including change 1.

8. MIL-STD-794B, "Parts and Equipment, Procedures for Packaging and Packing of", including changes 1 and 2.

9. MIL-STD-810B "Environmental Test Methods", including notices 1 thru 4.

10. MIL-C-392F, "Conveyor, Belt: Portable."

11. MIL-C-11218C, "Conveyors, Roller and Wheel, Gravity and Conveyor Supports."

12. MIL-C-11819C, "Conveyors, Belt (Assorting, Laundry Bundle)."

13. MIL-[illegible]-43528, "Conveyor, Roller, Gravity, 1000 Lb/Ft."

UNCLASSIFIED

Security Classification

DOCUMENT CONTROL DATA - R & D

(Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified)

1 ORIGINATING ACTIVITY (Corporate author)	2a. REPORT SECURITY CLASSIFICATION
US Army Test and Evaluation Command Aberdeen Proving Ground, Maryland 21005	Unclassified
	2b. GROUP

3 REPORT TITLE

US Army Test and Evaluation Command System Engineering Test Operations Procedure - "Conveyor Equipment".

4 DESCRIPTIVE NOTES (Type of report and inclusive dates)

Final

5. AUTHOR(S) (First name, middle initial, last name)

6. REPORT DATE	7a. TOTAL NO. OF PAGES	7b. NO. OF REFS
1 December 1971	4	13

8a. CONTRACT OR GRANT NO.	9a. ORIGINATOR'S REPORT NUMBER(S)
b. PROJECT NO.	TOP 9-2-046
c. AMCR 310-6	9b. OTHER REPORT NO(S) (Any other numbers that may be assigned this report)
d.	

10. DISTRIBUTION STATEMENT

pproved for public release; distribution unlimited.

11. SUPPLEMENTARY NOTES	12. SPONSORING MILITARY ACTIVITY
	Headquarters US Army Test and Evaluation Command Aberdeen Proving Ground, Md. 21005

13 ABSTRACT

A guide to engineering test procedures for evaluating the operational and performance characteristics of conveyor equipment. Designates procedures for pre-operational inspection, physical characteristics, safety, performance tests, environmental tests, transportability, human factors evaluation, reliability, durability, maintenance evaluation and value analysis. Not applicable to service testing or environmental testing at climatic test sites.

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DD FORM 1 NOV 1473 REPLACES DD FORM 1473, 1 JAN 64, WHICH IS OBSOLETE FOR ARMY USE.

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14. KEY WORDS	LINK A		LINK B		LINK C	
	ROLE	WT	ROLE	WT	ROLE	WT
Conveyor, Belt						
Equipment						
Roller, Gravity						
Roller and Wheel						

UNCLASSIFIED

Security Classification