DEUTSCH* DT/DTP Ultraviolet effects Engineering Test Report

1. INTRODUCTION

1.1. Purpose

Testing was performed on DEUTSCH DT and DTP series connector systems to determine conformance the accelerated weathering testing (UV Exposure of Nonmetallic Materials). Test procedures are given in SAE J2030, dated 2002/2007.

1.2. Scope

This report covers the accelerated weathering (UV Exposure of Nonmetallic Materials) performance of the DT and DTP series connector systems. Testing was performed at the Hemet Product Test Laboratory in 2003/2007. The test file numbers for this testing are listed in Figure 1. This documentation is on file at, and available from Product Engineering, Industrial Commercial Transportation (ICT) Laboratory.

Test Groups	Test Report
1, 2, 3, 4	IPD 031120-01
5, 6	IPD 031120-02

Figure 1

1.3. Conclusion

The DEUTSCH DT and DTP series connector systems conformed to the accelerated weathering (UV Exposure of Nonmetallic Materials) performance requirements when tested per the sequences shown in Figure 3 of this document. Exposure to ultraviolet light has no detrimental effects on the connectors.

1.4. Test Specimens

Test specimens were representative of normal production lots. Specimens identified with the part numbers given in Figure 2 were used for testing.

DEUTSCH PART NUMBER	DESCRIPTION	TEST GROUP
DT04-2P-E005	2 pin, Receptacle, N-Seal, End Cap	1, 2, 5, 6
DT04-12PB	12 pin, Receptacle, N-Seal	
DT06-2S-E005	2 pin, Plug, N-Seal, End Cap	
DT06-12SB	12 pin, Plug, N-Seal	
DTP04-4P-E004	4 pin, Receptacle, N-Seal	3, 4
DTP06-4S-E004	4 pin, Plug, N-Seal	

Figure 2

| Indicates Change

1.5. Environmental Conditions

Unless otherwise stated, the following environmental conditions prevailed during testing:

Temperature: 15° to 35°C
Relative humidity: 25 to 75%

1.6. Qualification Test Sequences

TEST OR EXAMINATION	TEST GROUP (a)					
	1	2	3	4	5	6
	TEST SEQUENCE (b)					
Visual Examination	1, 6	1, 5	1, 6	1, 5	1, 8	1, 7
Ultraviolet effect	2		2		2	
Durability	3	2	3	2	3	2
Maintenance Aging	4	3	4	3	4	3
Contact Retention	5	4	5	4	5	4
Connector Retention					6	5
Impact					7	6

Figure 3

a) Specimens were prepared in accordance with their production drawings and were selected at random from current production.
   - Groups 1, 2, 5 & 6 specimens consisted of 2 and 12 position connectors with DEUTSCH stamped & formed size 16 nickel pins and sockets with 14 SXL wire.
   - Groups 3 & 4 specimens consisted of 4 position connectors with DEUTSCH stamped & formed size 12 nickel pins and sockets with 12 SXL wire.

b) Numbers indicate the sequence in which the tests were performed.

2. SUMMARY OF TESTING

2.1. Visual Examination

A. Procedure: EIA-364-18

B. Method: The visual examination should be performed prior to testing, noting in detail any manufacturing or material defects such as cracks, tarnishing, deformities, etc.

C. Requirement: No physical defects detrimental to product performance.

D. Result: **PASSED.**

2.2. Ultraviolet effect

A. Procedure: SAE J2030

B. Method: Completely assemble plug and receptacle with all applicable components, such as terminals. Test the mated connectors for 1000 hours per ASTM G154 using an unfiltered UVA 340 lamp with 20 hours UV and 4 hours of condensation for each cycle.

C. Requirement: No physical defects detrimental to product performance.

D. Result: **PASSED.**

2.3. Durability

A. Procedure: MIL-STD-1344

B. Method: The connector shall be mated and unmated for a total of 100 complete cycles at room temperature.

C. Requirement: No physical defects detrimental to product performance.

D. Result: **PASSED.**

2.4. Maintenance aging

A. Procedure: MIL-STD-1344

B. Method: Subject 10% of the cavities to 10 cycles of inserting and removing its respective contact. Insert by hand, remove using removal tool.

C. Requirement: No physical defects detrimental to product performance.

D. Result: **PASSED.**

2.5. Contact Retention

A. Procedure: MIL-STD-1344

B. Method: Subject each wired contact to an applied load of 25 lbf for a period of 15 seconds in a direction tending to push the contact out of the rear of the connector.

C. Requirement: No physical defects detrimental to product performance.

D. Result: **PASSED.**

2.6. Connector Retention

A. Procedure: SAE J2030

B. Method: Apply a pulling force to the wire bundle of the mated connector. The load shall be applied for 30 seconds.

C. Requirement: No physical defects detrimental to product performance.

D. Result: **PASSED.**

2.7. Impact

A. Procedure: MIL-STD-1344

B. Method: Wired mated connector shall be dropped from a height of 1.2m on a cement floor. This action is to be completed a total of five (5) times.

C. Requirement: No physical defects detrimental to product performance.

D. Result: **PASSED.**

3. REVISION HISTORY

Rev Ltr	Brief Description of Change	Date	Dwn	Apvd
A	Initial Release	12-Jul-24	AJ	CB