



Rev.	Changed by	Revisions	Approved	Release Date
-	Browning	New Release	DG MB	4-18-14

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### 1.0 PURPOSE

The purpose of this report is to act as a guide to determining the service life of restraint webbing based on test data previous collected in other studies. This report is a guide only and not a definitive gauge. The webbing is always to be replaced on condition as determined by the operator.

### 2.0 RELATED DOCUMENTS

- SAE AS8043 Torso Restraint Systems
- TR505874 Affects of UV Exposure to Nylon and Polyester Seatbelt Webbing
- TR505890 Service Life Test Plan/Report for Nylon and Polyester Seatbelt Webbing
- R503922 Web Fray Guidelines

### 3.0 VISUAL CONDITION SCORE

The visual condition scoring system can be seen in Table 1. Each webbing sample begins with 10 points. For every corresponding flaw, the appropriate amount of points is deducted from the score. Multiple flaw types can be seen on single samples so any score between 0 and 10 points is possible. Using this system, the highest possible Visual Condition Score (VCS) is 10, and the lowest possible VCS is 0.

Table 1: Visual Condition Scoring System		
Flaw Type	Score Deductions	Corresponding Figure
None (Looks New)	-0 pts	Figure 1
Slight Fraying	-1 pt	Figure 2
Fraying	-2 pts	Figure 3
Very Frayed	-3 pts	Figure 4
Small Rip	-1 pt	Figure 5
Ripped	-2 pts	Figure 6
Heavy Ripping	-3 pts	Figure 7
Slight Discoloration	-1 pt	Figure 8
Discoloration	-2 pts	Figure 9
Slightly Warped	-1 pt	Figure 10
Warped	-2 pts	Figure 11
Very Warped	-3 pts	Figure 12
Scratched	-1 pt	Figure 13

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#### 4.0 VISUAL CONDITION OF THE WEBBING



**Figure 1:** “Looks New” – no visible flaws



**Figure 2:** “Slight Fraying” – edges of webbing are partially tattered and/or worn

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**Figure 3:** “Fraying” – exterior and/or edges of webbing are tattered or worn and damaged



**Figure 4:** “Very Frayed” – exterior of webbing is substantially worn and damaged



**Figure 5:** “Small Rip” – torn less than 0.5 inches on edge of webbing

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**Figure 6:** “Ripped” – torn between 0.5 and 3 inches on edge of webbing



**Figure 7:** “Heavy Ripping” – tear exceeding 3 inches on edge of webbing or multiple tears exceeding 0.5 inches throughout webbing



**Figure 8:** “Slight Discoloration” – small amount of dirt or fading color

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**Figure 9:** “Discoloration” – fair amount of dirt or fading color



**Figure 10:** “Slightly Warped” – small amount of webbing curvature  
(usually occurs with small fraying along one side)



**Figure 11:** “Warped” – fair amount of webbing curvature  
(usually occurs with fraying along one side)

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**Figure 12:** “Very Warped” – large amount of webbing curvature (usually occurs with very frayed sides and sometimes with discoloration)



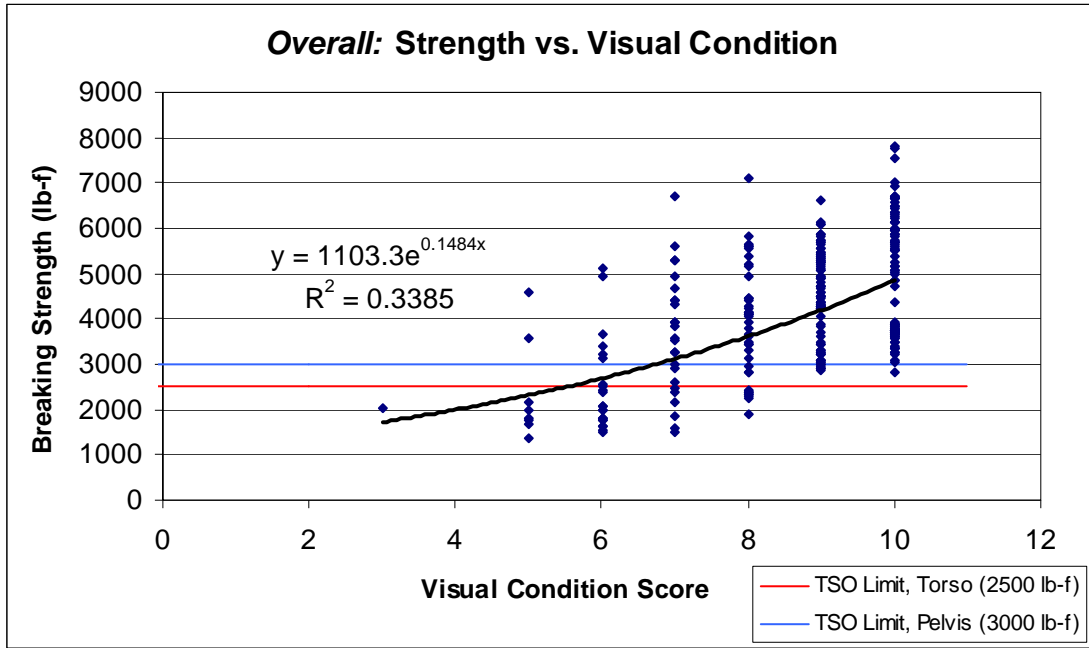
**Figure 13:** “Scratched” – minor surface scratches and scuffs on webbing exterior

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**5.0 RECOMMENDATIONS**

The ultimate breaking strength is proportional to the visual condition of the webbing samples.



**Figure 14: Overall Strength vs Visual Condition**

Figure 14 shows the webbing breaking strength versus visual condition scores for tested samples. If the webbing sample scores 8 points or less according to Table 1, it is recommended that the old webbing should be replaced with new webbing. If the webbing scores above 8 points it will be (in most cases, but not all) considered airworthy according to TSO-C22g, TSO-C114, and SAE AS 8043 standards.

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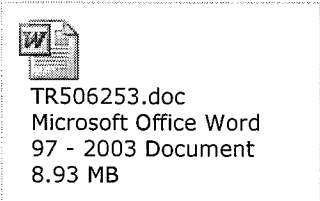
## Engineering Change Order

ECO# 3622	Priority# 2	Date: 4/3/2014
Submitter: Matt Browning	Department: Engineering	Extension:
Drawing No.: TR506253	Product Line: Seatbelts	Change Level: <input type="radio"/> Class I <input type="radio"/> Class II
Rev: -	Product Used On:	
Drawing Title: WEBBING SERVICE LIFE GUIDELINES		Desired Release Date: 4/17/2014

<b>Replace/New Release?</b>	<b>Customer Request?</b>
Reason for Change: New document release	

Description of Change: (If Multiple DWGs, List PN/Rev/Description)  
New document release

Form, Fit, Function Affected? <input type="radio"/> Yes <input checked="" type="radio"/> No	Customer Controlled Drawing? <input type="radio"/> Yes <input checked="" type="radio"/> No	Responsible: Matt Browning
<input type="checkbox"/> Risk Analysis	Does Change Require? <input type="checkbox"/> Test Plan/Report?	<input type="checkbox"/> Update Certification Docs?
<input type="checkbox"/> Summary Report?	<input type="checkbox"/> TSO/PMA?	<input type="checkbox"/> Update Work Instructions?
AO79 / Update Required? <input type="radio"/> Yes <input checked="" type="radio"/> No	FAA <input type="radio"/> Major <input checked="" type="radio"/> Minor <input type="radio"/> N/A	
DO178 Software Affected <input type="radio"/> Yes <input checked="" type="radio"/> No	Software Safety Affected <input type="radio"/> Yes <input checked="" type="radio"/> No	Software Certification Affected <input type="radio"/> Yes <input checked="" type="radio"/> No
Disposition		
WIP: <u>No Effect</u>	Qty On Hand: <u>No Effect</u>	On Order: <u>No Effect</u>



Attach File:

Effective Date: 4-18-14

### REQUIRED PRE-APPROVALS

Configuration Management: <i>Jennifer A. Walsh</i> 4/7/14	Checking: <i>D. GOETZ</i> 4/8/14
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### FINAL APPROVALS

Engineering: <i>Matt</i> 4/15/14	Quality: <i>Cheryl</i> 4/17/14	Sales/Program Management: <i>Manufacturing</i> <i>John</i> 4/17/14
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Certification:	Planning/Procurement:	Manufacturing: Sales
<i>D. Galt</i> 4/18/14	<i>Cory R. Man</i> 4/17/14	<i>C. Bergman</i> 4/17/14