

BOMBARDIER

Toronto Site

PROPRIETARY INFORMATION

PPS 25.64

PRODUCTION PROCESS STANDARD

APPLICATION OF DSC 91 AND DSC 464 ADHESIVE TAPES

- Issue 11 - This standard supersedes PPS 25.64, Issue 10.
- Vertical lines in the left hand margin indicate technical changes over the previous issue.
 - Direct PPS related questions to christie.chung@aero.bombardier.com or (416) 375-7641.
 - This PPS is effective as of the distribution date.

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Quality

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1 SCOPE

- 1.1 This Production Process Standard (PPS) specifies the procedure and requirements for the application of DSC 91 and DSC 464 adhesive tape.
 - 1.1.1 This PPS complements the engineering drawings that specify its use as an authorized instruction. The procedure specified in this PPS shall be followed to ensure compliance with all applicable specifications. In general, if this PPS conflicts with the engineering drawing, follow the engineering drawing. The requirements specified in this PPS are necessary to fulfil the engineering design and reliability objectives.
 - 1.1.2 Refer to [PPS 13.26](#) for the subcontractor provisions applicable to this PPS.
 - 1.1.3 Procedure or requirements specified in a Bombardier BAPS, MPS, LES or P. Spec. do not supersede the procedure or requirements specified in this PPS. Similarly, the procedure and requirements specified in this PPS are not applicable when use of a BAPS, MPS, LES or P. Spec. is specified.

2 HAZARDOUS MATERIALS

- 2.1 Before receipt at Bombardier Toronto, all materials shall be approved and assigned Material Safety Data Sheet (MSDS) numbers by the Bombardier Toronto Environment, Health and Safety Department. Refer to the manufacturer's MSDS for specific safety data on any of the materials specified in this PPS. If the MSDS is not available, contact the Bombardier Toronto Environment, Health and Safety Department.

3 REFERENCES

- 3.1 [PPS 13.26](#) - General Subcontractor Provisions.
- 3.2 [PPS 31.17](#) - Solvent Usage.

4 MATERIALS AND EQUIPMENT

4.1 Materials

- 4.1.1 Abrasive paper, aluminum oxide, 120-180 grit size.
- 4.1.2 DSC 91 adhesive transfer tape, as specified on the engineering drawing (see [Table I](#)).
- 4.1.3 DSC 91 adhesive tape, as specified on the engineering drawing (see [Table II](#)).
- 4.1.4 DSC 464 fire retardant fastening tape, hook & loop, self-adhesive, as specified on the engineering drawing (see [Table III](#)).

4.2 Equipment

- 4.2.1 Scissors or knife.
- 4.2.2 Lint-free cotton gloves (e.g., DSC 422-1).
- 4.2.3 Rubber or stitch roller.
- 4.2.4 Tack cloths (e.g., DSC 375-1).

TABLE I - DSC 91 ADHESIVE TRANSFER TAPES

DSC PART NUMBER	MATERIAL	THICKNESS (INCHES)	WIDTH (INCHES)	COLOUR
91-8-1	CARPET TAPE SEE NOTE 1	0.013	1	WHITE OR BLACK
91-8-2			2	
91-11-1	ADHESIVE TRANSFER TAPE	0.002	1/4	TRANSPARENT
91-11-2			1/2	
91-11-3			3/4	
91-11-4			1	
91-13-1	ADHESIVE TRANSFER TAPE (ACRYLIC ADHESIVE)	0.005	1/2	TRANSPARENT
91-13-2			1	
91-13-3			6	
91-13-4			12	
91-13-5			24	
91-14-1	ADHESIVE TRANSFER TAPE (MODIFIED ACRYLIC ADHESIVE)	0.002	1/2	TRANSPARENT
91-14-2			1	
91-14-3			6	
91-14-4			12	
91-14-5			24	
Note 1. Meets flammability requirements of FAR 25.853(a), App. F, Part I (ii), AMDT 25-86.				

TABLE II - DSC 91 ADHESIVE TAPES

DSC PART NUMBER	MATERIAL	THICKNESS (INCHES)	WIDTH (INCHES)	COLOUR
91-1-1	VINYL TAPE (SEE NOTE 5)	0.007	1/2	BLACK
91-1-2			3/4	
91-1-3			1	
91-1-4			2	
91-1-5			3	
91-1-6			4	
91-1-1A		0.005	1/2	YELLOW
91-1-2A			3/4	
91-1-3A			1	
91-1-4A			2	
91-1-5A			3	
91-1-6A			1 1/2	
91-1-1B			1/2	WHITE
91-1-2B			3/4	
91-1-3B			1	
91-2-1	GLASS CLOTH TAPE (RUBBER THERMOSET ADHESIVE)	0.007	1/2	WHITE
91-2-2			3/4	
91-2-3			1	
91-2-1A	GLASS CLOTH TAPE (SILICONE ADHESIVE)	0.007	1/2	WHITE
91-2-2A			3/4	
91-2-3A			1	
91-3-1	TEFLON TAPE (SILICONE ADHESIVE) SEE NOTES 1 AND 2	0.006	1	GRAY OR WHITE
91-3-1A		0.003		
91-3-1B		0.011		
91-3-2		0.004	2	
91-3-3		0.006	2 1/2	
91-4-0	POLYESTER TAPE	0.003	1/2	WHITE
91-4-1			1	
91-4-0A			1/2	TRANSPARENT
91-4-1A			1	

TABLE II - DSC 91 ADHESIVE TAPES

DSC PART NUMBER	MATERIAL	THICKNESS (INCHES)	WIDTH (INCHES)	COLOUR
91-5-1	POLYURETHANE FOAM TAPE	0.062	1	WHITE
91-5-2		0.125		
91-5-3		0.250		
91-5-1A		0.062	1/2	
91-5-2A		0.125		
91-5-3A		0.250		
91-6-2	TEFLON THREAD SEALING TAPE	N/A	1/2	WHITE
91-7-1	ALUMINUM FOIL/CLOTH LAMINATE TAPE	N/A	3	ALUMINUM
91-9-1	ALUMINUM FOIL TAPE	0.005 - 0.006	1.2	ALUMINUM
91-9-2			1	
91-9-3			2	
91-10-1	RULON TAPE (CERAMIC/TEFLON)	0.010	1/2	MAROON
91-10-2			1	
91-10-3			2	
91-12-1	POLYIMIDE TAPE	0.003	3/8	NATURAL
91-12-2			1/2	
91-12-3			3/4	
91-12-4			1	
91-15-1	SOLVENT RESISTANT UHMW POLYETHYLENE TAPE (ACRYLIC ADHESIVE)	0.003 - 0.007	3/4	TRANSPARENT
91-15-2			1/4	
91-15-3			23 3/4	
91-15-4			11	
91-15-5			3	
91-16-1	SOLVENT RESISTANT POLYESTER/ACRYLIC PROTECTIVE TAPE HIGH-TEMPERATURE SEE NOTE 2	0.002 - 0.003	2	TRANSPARENT
91-16-2			1.5	
91-17-1	ANTI-SLIP, PHOTOLUMINESCENT	0.060	2	YELLOW/WHITE
91-18-2	FLAME RETARDANT, GLASS CLOTH TAPE (RUBBER/RESIN ADHESIVE) SEE NOTE 2	0.006 - 0.008	2	WHITE
91-18-2A		0.013		
91-19-1	FLAME RETARDANT, SILICONE FOAM RUBBER TAPE (ACRYLIC ADHESIVE) SEE NOTE 2	0.062	1	GREY
91-19-2		0.125		
91-19-3		0.250		
91-19-1A		0.062	1/2	
91-19-2A		0.125		
91-19-3A		0.250		

TABLE II - DSC 91 ADHESIVE TAPES

DSC PART NUMBER	MATERIAL	THICKNESS (INCHES)	WIDTH (INCHES)	COLOUR
91-21-1	FLAME RETARDANT, INSULATION TAPE (PRESSURE SENSITIVE) SEE NOTES 2 AND 4	0.004 - 0.005	1	WHITE
91-21-2			2	
91-21-3			3	
91-21-4			4	
91-21-5			5	
91-21-7			12	
91-21-1A			1/2	
91-22-1	FLAME RETARDANT, REINFORCED POLYVINYL FLUORIDE TAPE FOR REPAIR (PRESSURE SENSITIVE) SEE NOTE 2	0.004 - 0.005	1	DULL GREY
91-22-2			2	
91-22-3			3	
91-22-4			4	
91-22-5			5	
91-22-6			7	
91-22-1A			1/2	
91-23-1	REINFORCED PEEK TAPE (PRESSURE SENSITIVE) SEE NOTE 3	0.005 (MAX)	1	OPAQUE WHITE
91-23-2			2	
91-23-3			3	
91-23-4			4	
91-23-5			5	
91-23-6			6	
91-23-1A			1/2	
91-24-1	DOUBLE COATED FLAME RETARDANT TAPE SEE NOTE 2	0.013	1	WHITE
91-24-2			2	
91-25-1	FLAME RETARDANT GALLEY TAPE SEE NOTE 2	0.010	1	BLACK
91-25-2			2	
91-25-3			3	
91-25-4			4	
91-25-5			12	
91-25-6			18	

TABLE II - DSC 91 ADHESIVE TAPES

DSC PART NUMBER	MATERIAL	THICKNESS (INCHES)	WIDTH (INCHES)	COLOUR
91-26-1	REINFORCED POLYETHER ETHER KETONE TAPE ACRYLIC ADHESIVE COATED (PRESSURE SENSITIVE) SEE NOTE 3	0.005 (MAX)	1	DULL WHITE
91-26-2			2	
91-26-3			3	
91-26-4			4	
91-26-5			5	
91-26-6			6	
91-26-1A			1/2	
Note 1. Meets MIL-I-23594 or equivalent. Note 2. Meets flammability requirements of FAR 25.853(a), App. F, Part I (ii), AMDT 25-86. Note 3. Meets flammability requirements of FAR 25.856(a). Note 4. Where DSC 91-21-6 tape is specified, use DSC 91-23-6 tape. Note 5. Where DSC 91-20-4 tape is specified, use DSC 91-1-6 tape.				

TABLE III - DSC 464 FIRE RETARDANT SELF-ADHESIVE FASTENING TAPE

DSC COLOUR CODE	COLOUR	DSC PART NUMBER BREAK DOWN
464 X-1-X	BEIGE	<p>DSC464 X - X - X</p> <p>Width Code</p> <p>Colour Code</p> <p>H - Hook</p> <p>L - Loop</p> <p>Basic Number</p>
464 X-2-X	WHITE	
464 X-3-X	BLACK	
464 X-4-X	BROWN	
464 X-5-X	RED	
464 X-6-X	NAVY BLUE	
464 X-7-X	GREEN	
464 X-8-X	GREY	
464 X-9-X	CHARCOAL	
DSC WIDTH CODE	WIDTH (INCHES)	
464 X-X-1	0.63	
464 X-X-2	0.75	
464 X-X-3	1.00	
464 X-X-4	1.50	
464 X-X-5	2.00	

5 PROCEDURE

5.1 Preparation of Parts

- 5.1.1 Wear clean cotton gloves when handling bonding surfaces. Do not touch or contaminate prepared surfaces with bare hands or other foreign objects.
- 5.1.2 Immediately before applying tape, prepare the bond surfaces according to [Table IV](#).

TABLE IV - PREPARATION OF PARTS FOR TAPE APPLICATION

MATERIAL	CLEANING PROCEDURE
ALL F19 PRIMED PARTS	Solvent clean according to PPS 31.17 .
BARE METAL PARTS	Solvent clean according to PPS 31.17 .
PAINTED PARTS	Step 1. Lightly scuff the bonding surfaces with 120 to 180 grit abrasive paper. Step 2. Solvent clean according to PPS 31.17 .
POLYCARBONATE PARTS	Solvent clean according to PPS 31.17 .
RUBBER PARTS	Solvent clean according to PPS 31.17 .
SILICONE RUBBER PARTS	Step 1. Solvent clean according to PPS 31.17 . Step 2. Lightly scuff the bonding surfaces with 120 to 180 grit abrasive paper. Step 3. Dust off using tack rag.

5.2 Application of DSC 91 Adhesive Transfer Tape (see [Table I](#))

- 5.2.1 Apply adhesive transfer tape in a clean area as specified in [section 6.2](#).
- 5.2.2 Using a suitable tape width for the job at hand, apply the tape specified by the engineering drawing to one of the surfaces to be bonded as follows:
- Step 1. Unroll a length of tape, approximately 6" long.
- Step 2. With the adhesive surface facing the part, press the end of the tape onto a convenient starting point on the part (usually a straight, flat surface).
- Step 3. Using firm finger pressure, smooth the tape onto the part, working towards the roll of tape.
- Step 4. Continue unrolling approximately 6" lengths of tape and smoothing onto the part until the specified surface is covered.
- Step 5. Cut off the roll using a pair of scissors or knife. When applying tape around corners, it may be necessary to cut the tape to apply it in sections.
- Step 6. Align the parts together.

- Step 7. Gradually peel the backing away from the adhesive tape while pressing the parts together.
- Step 8. Roll down with a rubber or stitch roller to ensure intimate contact over the full bonding surface.

5.3 Application of DSC 91 Adhesive Tape (see [Table II](#)) and DSC 464 Fastening Tape (see [Table III](#))

5.3.1 Using a suitable tape width for the job at hand, apply the tape specified by the engineering drawing as follows:

- Step 1. Cut a length of tape slightly larger than the surface to be covered.
- Step 2. Gradually peel the backing away from the adhesive tape.
- Step 3. With the adhesive surface facing the part, press the end of the tape onto a convenient starting point on the part (usually a straight, flat surface).
- Step 4. Using firm finger pressure, smooth the tape onto the part, working from one end of the tape to the other.
- Step 5. Ensure that the specified surface is covered.
- Step 6. When applying tape around corners, it may be necessary to cut the tape to apply it in sections.
- Step 7. Roll down with a rubber or stitch roller to ensure intimate contact over the full bonding surface. Do not use pins or sharp objects to puncture the air bubbles.

5.4 Re-Work

5.4.1 Re-Work of Parts Adhered Together with DSC 91 Adhesive Transfer Tape (see [Table I](#))

5.4.1.1 Re-work small areas in which the parts have failed to adhere as follows:

- Step 1. Cut a length of tape slightly larger than the affected area.
- Step 2. Gently lift the surfaces apart.
- Step 3. Insert and smooth down the new length of tape into the affected area.
- Step 4. Remove the backing and press the parts together.

5.4.1.2 If large areas or previously re-worked sections fail to adhere, carefully separate the parts and re-clean the bonding surfaces according to [section 5.1](#) before re-applying the tape according to [section 5.2](#).

5.4.2 Re-Work of Parts Covered By DSC 91 Adhesive Tape (see [Table II](#)) and DSC 464 Fastening Tape (see [Table III](#))

- 5.4.2.1 If tape fails to adhere to the part, remove the adhesive tape and re-clean the bonding surface according to [section 5.1](#) before re-applying the tape according to [section 5.3](#).

6 REQUIREMENTS

6.1 General

- 6.1.1 For parts bonded together according to [section 5.2](#), ensure intimate contact over the full bonding surface. Visual indication of poor adhesion shall be repaired according to [section 5.4.1](#).
- 6.1.2 For parts covered with adhesive or fastening tape according to [section 5.3](#), ensure that there is no visual indication of poor adhesion. Repair such parts according to [section 5.4.2](#).

6.2 Bonding Area Conditions

- 6.2.1 The cleanliness of the bonding area (e.g., tables, floors, equipment, walls, etc.) shall be checked and cleaned as necessary to ensure that dust accumulation, dirt or other contamination will not be evident. Maintain records of dates of cleaning.
- 6.2.2 Maintain the temperature and relative humidity of the bonding areas within the range specified in [Figure 1](#). Bonding when the relative humidity is below 30% will increase the chance of static discharge and worker discomfort, but will not affect part quality.

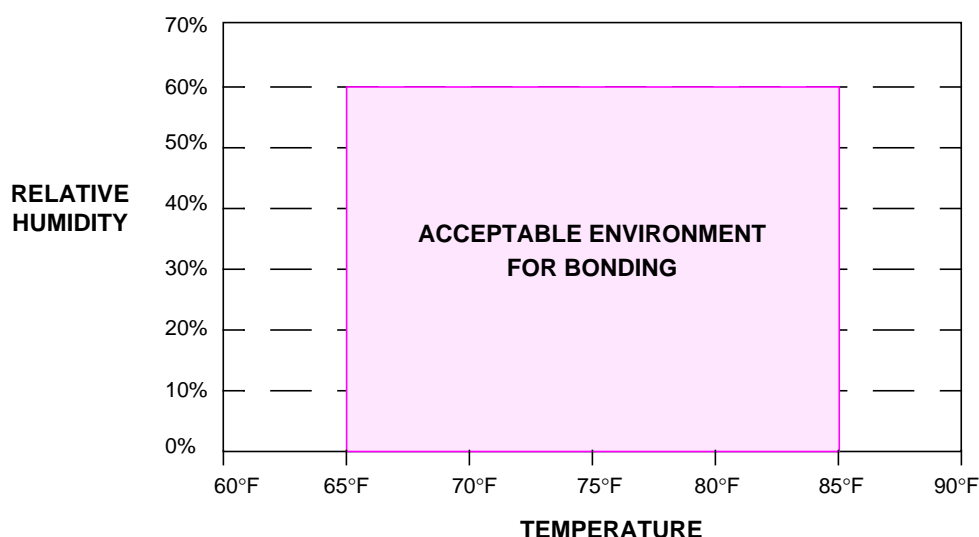


FIGURE 1 - TEMPERATURE AND HUMIDITY LIMITS

7 SAFETY PRECAUTIONS

- 7.1 *Observe standard plant safety precautions when performing the procedure specified herein.*
- 7.2 *Refer to [PPS 31.17](#) for the safety precautions for handling and using solvents.*

8 PERSONNEL REQUIREMENTS

- 8.1 Personnel responsible for the application of DSC 91 and DSC 464 adhesive tape shall have a good working knowledge of the applicable procedure and requirements as specified herein and shall have exhibited their competency to their supervisor.