9 Silverdale Enterprise Park
Kents Lane
Newcastle-u-Lyme ST5 6SR
Phone (44) (0)1782-444219
Fax (44) (0)1782-610033
info@heathcotes.com
www.heathcotes.com

Heathcote Industrial Plastics

Procedure for the Fitment of CLD's

CLD's Reduce noise & vibration

Fitting Procedure

CLD's are sound damping plates designed to reduce noise & vibration .

1. INTRODUCTION

Metal structures vibrate and resonate noise, CLD's (Constrained Layer Dampers) fitted to resonating parts reduce the sound generated. This document details the procedure required for the satisfactory fitment of the CLD's .

2. MATERIAL / EQUIPMENT REQUIRED

2.1 Material

2.1.1 Structure part number (example).

2.1.2 CLD Part Number (example).

2.1.3 Cleaning solutions - cleaner A (example), cleaner B (example) , cleaner 1 part isopropynol to 9 parts water (Commercial "Screenwash" from your local Gararge).

2.1.4 Abrasive cleaning pads (such as 3M "Scotchbrite" brown)

2.2 Equipment

2.2.1 Suitable cleaning equipment capable of removing dirt, dust, oil etc. from the areas of the structure to which the CLD's will be applied.

2.2.2 Protective clothing for 2.2.1 above.

2.2.3 A suitable mechanical method of applying pressure to the outer (Metal) face of the CLD in order to ensure good bonding to the surface. A simple roller or pressure pad is adequate but if a roller is used it must be ensured that reasonable pressure is applied over the whole area of the CLD when bonding.

3. AMBIENT CONDITIONS

3.1 The structure to which the CLD is to be fitted MUST be within the temperature range 10°C minimum and 80°C maximum.

3.2 The General environment within which the bonding process is to be carried out shall be dry, clean and dust free.

4. Procedure

N.B. The CLD's must not be subjected to temperatures over 200°C and therefore must be applied after any operations such as welding.

4.1 Surface Preparation

4.1.1 It is imperative that a good clean metal surface is available to ensure satisfactory bond strength between the surface and the CLD. All materials used in the cleaning process shall be free from contaminants such as oil, grease etc.

4.1.2 "Spot Cleaning"

4.1.2.1 The surface of the structure to which the damper is to be fitted shall be inspected and any areas where severe contamination (such as a patch of oil or some spots of paint etc. exist shall be marked plainly and the contaminant removed. A physical method (such as by using an abrasive pad) is preferable but if this is unsuitable then a chemical method may be used. Any surface roughness (such as weld spatter) shall be removed.

Final surface roughness shall have a maximum of 0.1 mm amplitude, where vertical amplitude is defined as the vertical height between any peak and adjacent valley.

4.1.2.2 The area prepared shall extend at least 10 mm beyond the area to be covered by the damper.

4.1.2.3 All other areas of the structure shall be suitably protected during the cleaning process to prevent damage and ingress of subsequent cleaning agents into bearings, gearboxes, electrical parts etc.

4.1.3 Normal Cleaning

4.1.3.1 The surface of the structure where the CLD is to be attached shall have a maximum surface roughness of 0.1 mm (as 4.1.2.1)

4.1.4 Ensure that the prepared area is completely free from any residue or contaminant. It is imperative that the surface to be bonded is in a good clean condition. Final degrease shall be effected by cleaning with a lint free cloth and cleaning solution of 1 part isopropynol to 9 parts water (or commercial "Screenwash").

4.1.5 Bonding shall be performed immediately the area is dry.

4.1.6 If not practical to bond immediately the prepared surface shall be protected from the workshop environment by suitable covers. If the CLD is not fitted within 6 hours further cleaning as above is necessary.

Prior to bonding the prepared face shall be re-examined to ensure freedom from any contaminants and degreased by cleaning as per 4.1.4.

5. BONDING

5.1 The CLD's have a shelf life of 1 year if not bonded. All CLD's which have not been used within this time should be returned to the manufacturer who will confirm that they can still be used.

5.2 The CLD's are supplied with protective liners which are removed only at the time of bonding.

5.3 The CLD shall be located on the structure with the protective liners in place and a check should be made to ensure that the correct size part is being used. Simple positioning can be made on many parts but if there is any doubt then a simple positioning jig can be made to aid location.

5.4 The liner should be removed from the CLD and it carefully positioned on the structure. Once satisfactory positioning is obtained the CLD should be firmly and evenly pressed into place using a rubber roller or pressure pad over the whole area .

5.5 The pressure sensitivity of the CLD is such that initial bond strength is obtained as soon as even pressure has been applied. The structure must remain at an ambient temperature greater than 10°C for at least 24 hours at which time full bond strength is attained.

6 Painting

Following full bond strength being attained paint can be applied as required (over the CLD if necessary).