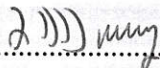
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DOCUMENT APPROVAL

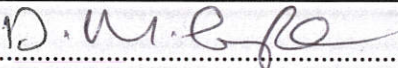
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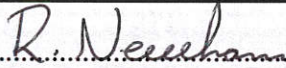
Your signature indicates that this document has been prepared in accordance with company standards or guidelines and adequately reflects the tasks and deliverables necessary.

Signature		Date	12-JUN-2015
Print Name	James Drury		
Title	Production Engineer		

Reviewer's Signature:

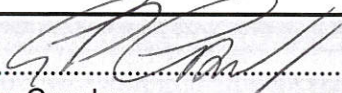
Your signature indicates that, you have reviewed this document and that it accurately and completely reflects the tasks and deliverables necessary.


Signature		Date	16-6-15
Print Name	Dave Cope		
Title	Deputy Head of CoilThread		

Signature		Date	16 June 2015
Print Name	Rob Newham		
Title	Operations Manager AEUS		

Quality Assurance/Compliance Approver's Signature:

Your signature indicates that this document complies with company standards or guidelines; and that the documentation and information contained herein complies with applicable regulatory, corporate, divisional/departmental requirements, and current Good Manufacturing Practices.

Signature		Date	16 June 2015
Print Name	Gary Crawley		
Title	Quality Manager		

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1.0 PURPOSE

- 1.1. The purpose of the document is to define the SOP (Standard Operating Procedures) to be followed by ADVANEX EUROPE Ltd, in order to ensure that the MecWash plant is optimised to facilitate the CoilThread product cleaning process effectively.

2.0 SCOPE

- 2.1. This document applies for the S-5 chemical cleaner used in the MecWash plant only.

3.0 TERMS, DEFINITIONS & ABBREVIATIONS

- 3.1. HMI – Human Machine Interface.


4.0 HEALTH, SAFETY & ENVIRONMENTAL

- 4.1. Within the factory area safety footwear is mandatory.
- 4.2. Within the factory area Safety glasses must be worn.
- 4.3. Safety goggles must be worn.
- 4.4. The use of heat resistant gloves is required whilst removing the sample from the Wash Tank Reservoir.
- 4.5. Gloves must be worn when handling the sampling jug to avoid personal contact with the chemicals.
- 4.6. Tweezers must be used to place the test tables into the sample of the solution.

5.0 ASSOCIATED DOCUMENTS

- 5.1. Disposal of waste effluent from MecWash plant (Document number AEU00428).
- 5.2. CoilThread finishing - MecWash tank record (Document number AEU00442).

6.0 PROCEDURE

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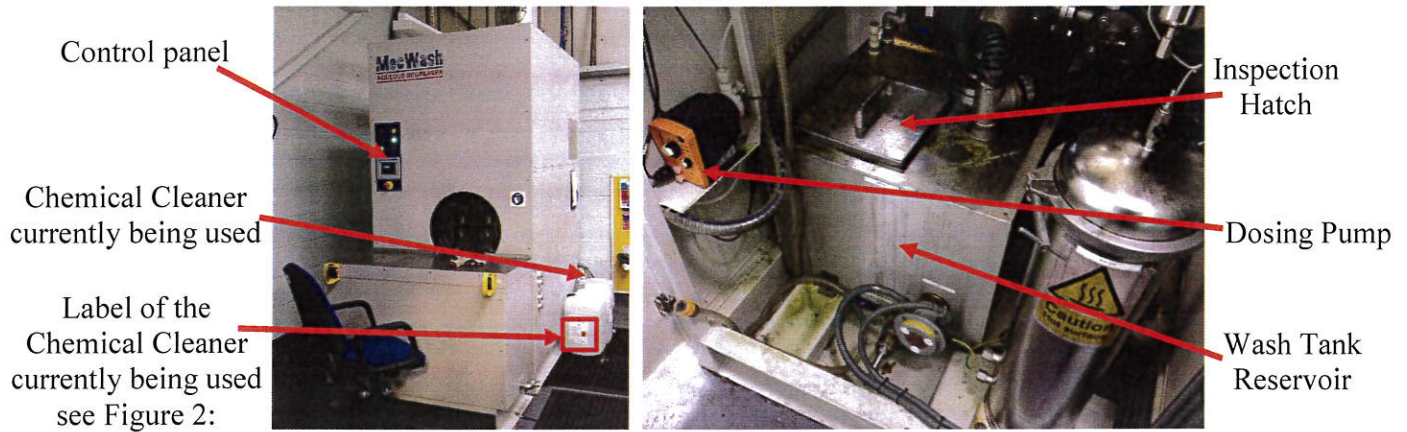


Figure 1: MecWash Plant.

6.1. General Information.

6.1.1. When To Check the Wash Solution;

- 6.1.1.1. The Wash Solution requires checking 24 hours after either the cleaner chemical barrel has been changed or the dosing pump shown in Figure 10: has been adjusted.

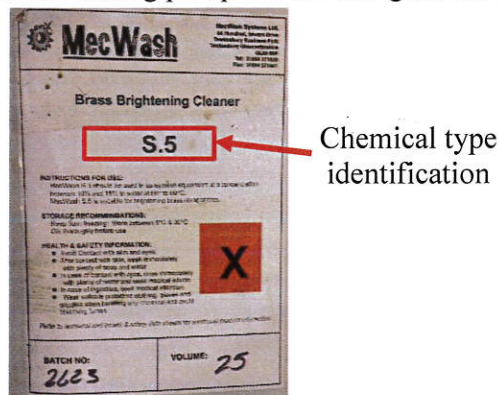


Figure 2: Cleaner chemical identification label.

- 6.1.1.2. **Ensure that S-5 Cleaning Chemical Used.** Ensure that the MecWash Plant is currently using the S-5 cleaning chemical, as shown in Figure 2:


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Figure 3: The testing kit.

6.1.2. **Get the Testing Kit.** Get the testing kit from its dedicated storage location.

6.2. **Get the Test Sample.**



Figure 4: Getting the required sample from the Wash Tank Reservoir.

6.2.1. **Open the Inspection Hatch of the Tank.** Ensuring that heat protective gloves are being worn, open the inspection hatch of the Wash Tank Reservoir to enable the required access.

NOTE: Heat Resistant Gloves Must Be Worn When Getting The Sample As The Wash Tank Reservoir Maybe Up To 85°C.

6.2.2. **Obtain Sample.** Using the sampling jug to get a sample of the cleaning solution, as shown in Figure 4:


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Figure 7: Count Out 12 tablets and line up in an ordered manor.

6.3.2. **Count Out Test Tablets.** Count out 12 tablets and then arrange in an ordered manor, as shown in Figure 7:

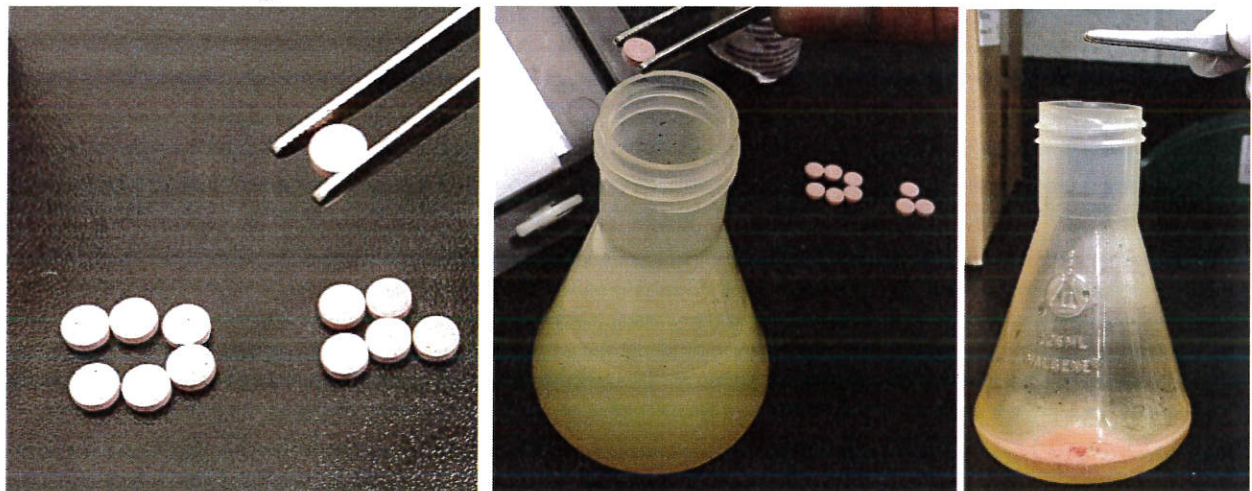



Figure 8: Using the tweezers to place one tablet at a time into the cleaning solution sample.

6.3.3. **Place One Tablet at a Time into Solution.** Using the tweezers, place one tablet at a time into the cleaning solution, once the bubbles subside, stir vigorously between each tablet to ensure that it is completely dissolved before placing the following tablet into the solution. Keep a note of the total number of tables required to change the colour of the solution to a yellow/orange colour.

Note: Do Not Put The Stopper On To The Conical Flask As Bubbles Will Be Produced.

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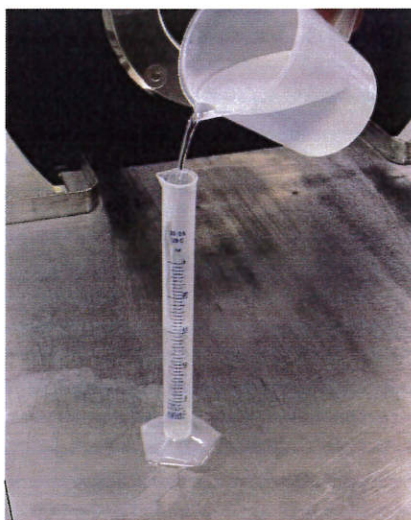


Figure 5: Pour the sample into the measuring cylinder.

6.2.3. Pour Sample into Measuring Cylinder. Measure the required 25ml of the cleaning solution using the measuring cylinder, as shown in Figure 5:

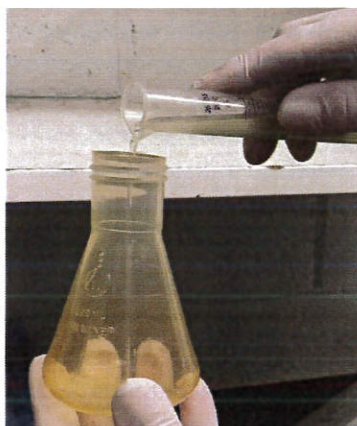



Figure 6: Pouring the measured sample into the conical flask.

6.2.4. Pour the Measured Sample into the Conical Flask. Once 25ml has been poured into the measuring cylinder, pour this into the conical flask.

6.2.5. Allow Sample to Cool to Room Temperature. Leave the sample to cool to room temperature before continuing.

6.3. Perform Test.

6.3.1. Ensure the Appropriate Tablets are Used the Chemical Cleaner. Ensure that the correct test tablets are used for the chemical cleaner to be tested, as shown in Figure 3:

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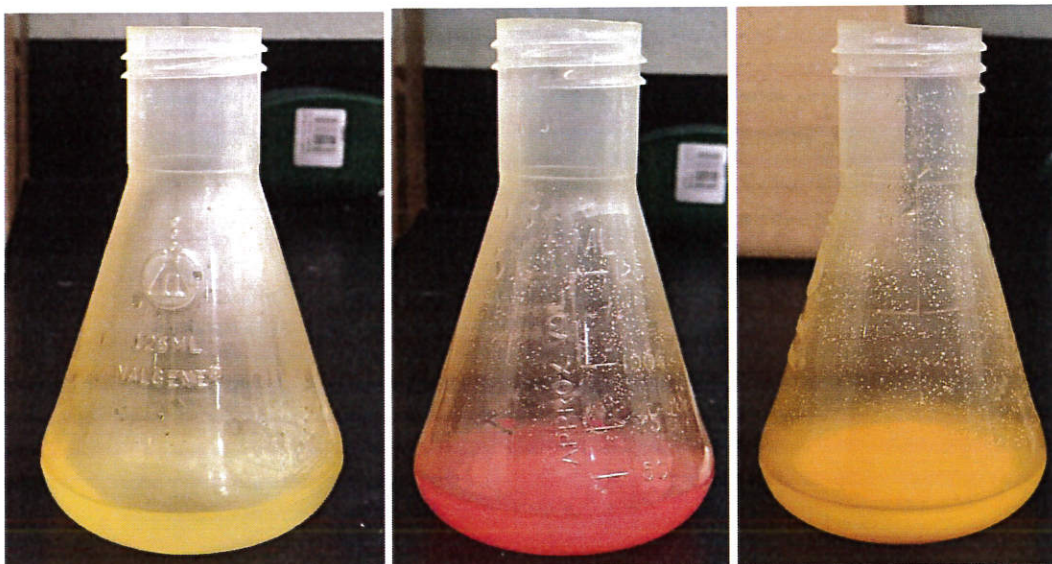


Figure 9: An example of the changing colour of the test sample.

6.3.4. **Check Colour Changes.** After each tablet is dissolved into the solution, check the solution for the required colour change to yellow/orange, there should be no traces of red, the last section to change will be the very top layer of the solution.

6.3.5. **Count Tablets Used.** Once the colour of the sample has changed as required, using the number of tablets used in reference to Table 1: to determine the strength of the cleaning chemical in the sample solution.

NOTE: The S-5 Cleaner Is Designed To Be Run Between 5% And 15%, So 3 To 9 Tablets Should Be Required To Effect The Change In Colour.


Number of Tablets Used	Percentage of cleaning chemical in solution (S-5).
3 Tablets	5%
6 Tablets	10%
9 Tablets	15%

Table 1: Number of tables required to turn cleaning solution yellow/orange indication strength of solution.

6.3.6. **Clean Test Equipment.** Once the test is complete clean all the test equipment in fresh tap water and then dry.

6.3.7. **Work Arising.** If the number of tables are in the correct range you can go to step 6.5 otherwise continue to step 6.4.

6.4. Adjustment of Solution Strength.

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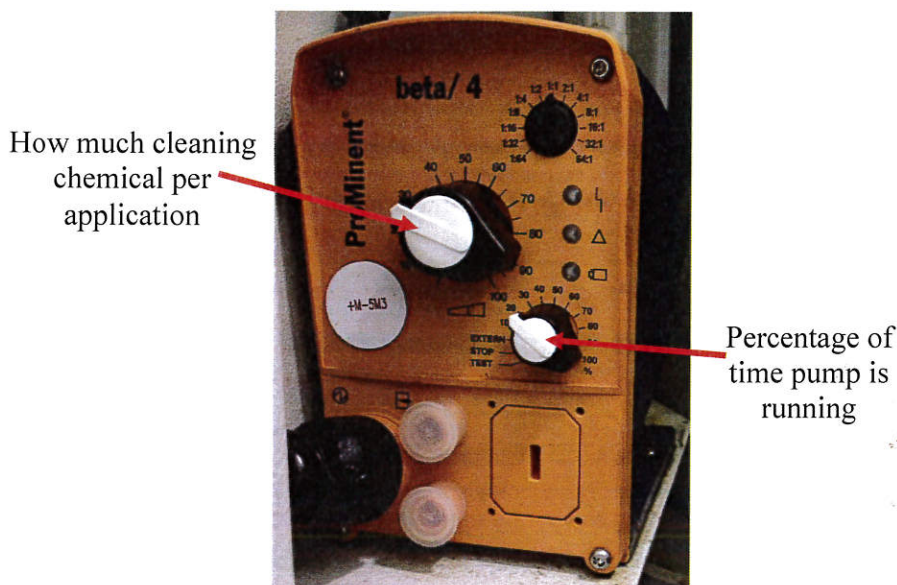


Figure 10: Adjustment of the dosing pump.

- 6.4.1. **Adjust the Dosing Pump.** If it is found that the levels of the cleaning chemical require adjustment in the solution the both the amount of cleaning chemical and how often it is added to the Wash Tank Reservoir can be adjusted using the control panel shown in Figure 10:
- 6.4.2. **Repeat Test.** Repeat the testing of further samples after each adjustment once sufficient time for the changes to take effect, as detailed in step 6.1.1.1.
- 6.5. **Task Conclusion.**
 - 6.5.1. **Ensure Sufficient Tablets Remain for Further Tests.** Before replacing the test items to the storage box, ensure that there is sufficient tablets remaining for further tests, if further tablets require ordering, flag this up to your team leader.
 - 6.5.2. **Replace Testing Equipment to Box.** Clean the conical flask and the sampling jug in fresh water and then dry before replacing into their dedicated locations in the storage box, as shown in Figure 3:
 - 6.5.3. **Record Procedure.** Record the occurrence and results of the procedure on the CoilThread finishing - MecWash tank record (Document number AEU00442).