Engineering change process of BESA registered HIU

Scope

Engineering change is a necessary process for manufacturers and can be bought about because of a supply issues, quality issues, as well as ratio or product improvement. For heat interface units tested under the BESA HIU test regime, it is imperative to maintain consumer confidence in the test results by ensuring that any change will not adversely affect the performance of the HIU.

Each manufacturer has a legal responsibility to ensure any claims they make about their product are maintained or updated as necessary.

Any reference to BESA within this process document is referring to the Technical Committee and Steering Group of the BESA HIU test regime. Any manufacturer's representatives, who have been elected to either committee, are not permitted to represent BESA in this matter.

Reference to the manufacturer in the process document is referring to the company or persons responsible for placing an HIU product onto the UK market.

Existing bill of materials for publish test results

Before an EC change process is implemented, it will be necessary to ensure the bill of materials for all existing tested HIU is brought up to the current standard. This means that individual components must not only list the component manufacturer, but also the exact component identification designation and number. This should include any undeclared components (such as electrical heating elements) and software/firmware versions.

Short-term temporary changes

Temporary changes and concessions should be dealt with by the manufacturer rather than forming part of the BESA engineering process. This is seen as a matter for the contract of sale between the manufacturer and customers who may be sold equipment that does not exactly match that tested to the BESA HIU test regime. It is for the manufacturer to decide how this will be agreed with their customer. In this regard, temporary changes are seen as different from permanent changes that will last longer than individual sales contracts, where there is transparency to both parties.

Change process under the BESA HIU test regime

The engineering change process consists of three routes that manufacturers must follow when making a product change in order to maintain the BESA registered status of their HIU. Failure to follow this process and declare a change may result in the product being deregistered and removed from the BESA website.

The manufacturer should refer to the change process flow chart to determine which action should be taken.

If an engineering change falls within the categories set out in **list C**, the manufacturer should complete the manufacturer's self-declaration form and submit it, along with any evidence required, to BESA. There will be an administration charge made by BESA to process the change. If the change is accepted by BESA, an addendum will be added to the HIU listing on the BESA website and confirmation will be sent to the manufacturer. If the change is not accepted, BESA will direct the manufacturer to an alternative route for full or partial testing.

For engineering changes that fall within the criteria of **list B**, the manufacturer should contact a Test House, or the BESA Technical committee, to assess if the proposed engineering change will have an effect on the test results. If it is assessed as not likely to have an effect, then the self-declaration route can be taken. The details and correspondence of the Test House or Technical committee should be presented to BESA as evidence, as well as shared with the other Test Houses to form a database of precedents. A key criterion to be considered by the Test House or Technical committee is whether the proposed change would likely alter the test results beyond the tolerances of the BESA test regime and the test rig. The Test House or Technical committee are expected to make a charge for this service.

If the proposed engineering change falls within the criteria covered in **list A**, the manufacturer should contact the Test House to arrange for either full testing or partial testing as set out in list A. Once completed, the new test results will be published on the BESA website as the current version. The older version will remain available on the website but clearly identified as *out of date*. The normal test regime charges of both the Test House and BESA will apply.

Engineering change self-declaration form

The declaration must contain the following information as a minimum.

Company Name:

HIU model identification:

BESA test results reference or HIU serial number or certificate number:

BESA test regime version of original test:

Details of engineering change (attach photos):

Part number/s of changed component:

Manufacturer of component:

Manufacturer's part number:

Date/FD code/serial number from which change will commence:

Details of the Test house or TC member responsible, who carried out the verification (attach report):

This declaration on behalf of the manufacturer confirms that the engineering change being made to the HIU variant falls within list C or list B (with independent verification) of the BESA engineering change process and therefore will not affect the original test results.

Signed:

Position in company:

BESA Technical committee acceptance of the self-declaration is confirmed on behalf of the committee:

Names of committee members:

Signed:

BESA record of engineering change (list C or B) for inclusion as an addendum

Date:

HIU model identifier:

HIU serial number/FD code change came into effect:

Component part number:

Revision identification (if more than one):

Description of engineering change made (include photo):

The BESA Technical committee accepted the above change would not affect the test results on (date):

BESA Service level

Many engineering changes have commercial value in some form, which means it is envisioned that there may be urgency to get a decision from the Technical committee. MEHNA members believe that a three-week turnaround time for normal decisions would be reasonable. At the same time on going testing work might be seriously held up if an unusual situation is encountered needing guidance from the TC. In these situations, the suggestion from MEHNA members is to have both a formal hierarchy of escalations (which takes precedent for the TC available time) and the ability to contract time from a key TC member, paid via the manufacturer.

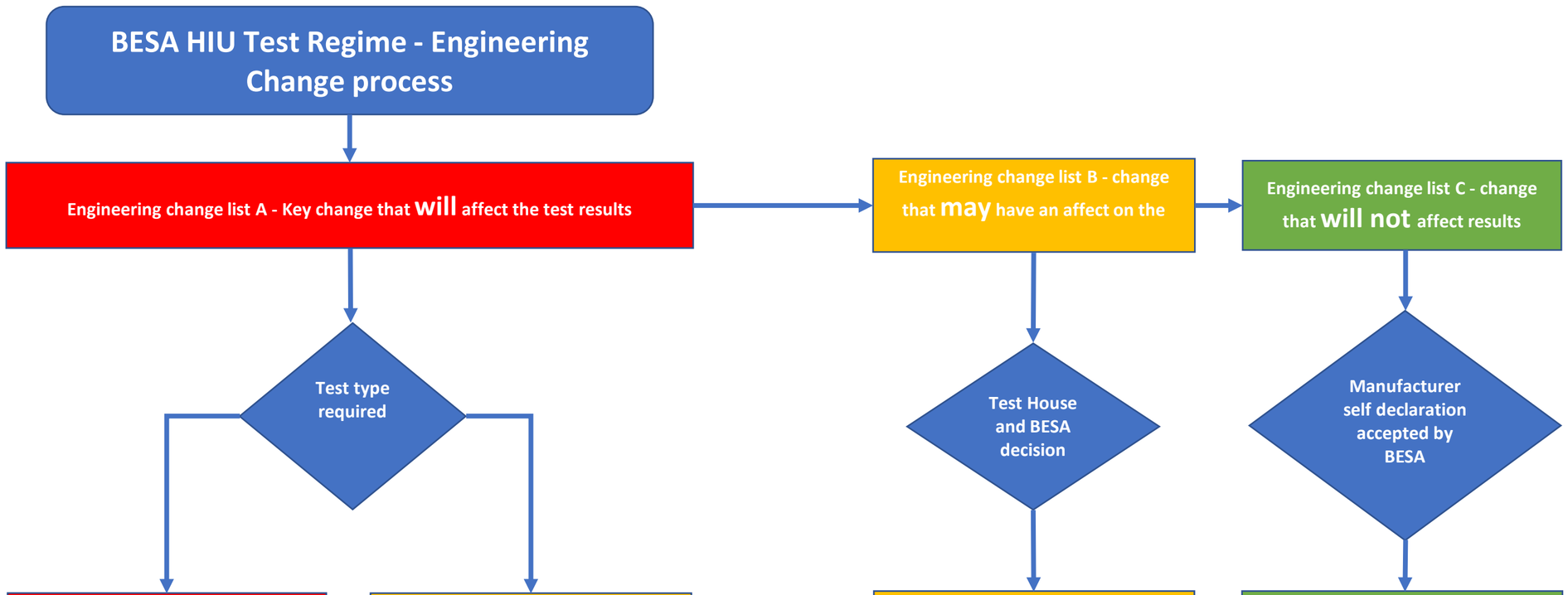
Complaints

Any complaints relating to the engineering change process should be dealt with within the standard BESA complaints process, published by BESA.

Process revision

The engineering change process should be reviewed in line with any new iterations of the BESA HIU test regime, to ensure it remains up to date and relevant. In the first year of its introduction, it is proposed that a review process is conducted once the process has had time to bed in, in case there are any unintended consequences or situations that need addressing further.

BESA HIU Test Regime - Engineering Change process



Full Test with new test results published to BESA website
A1.1 Insulation or thermal seal - pipe, component and HIU casing
A1.2 Control board type
A1.3 Electrical heater
A1.4 Common control valve/diverter (HW & HTG)

Partial Test with addendum published to BESA website	Required tests
A2.1 Space heating heat exchanger - treated as a variant	0, 1a-f
A2.2 Domestic hot water heat exchanger - treated as a variant	0, 2a-b,3a-d,4a-b,5a-b
A2.3 Mechanical or electrical sensors (dry pockets) and devices that generate control signals to HIU space heating control valves / actuators. Control valve and actuator for space heating	1a-f
A2.4 Mechanical or electrical sensors and devices that generate control signals to HIU DHW control actuators for domestic hot water (dry pockets)	2a-b,3a-d,4a-b,5a-b
A2.6 Control valve and actuator for domestic hot water	0, 2a-b,3a-d,4a-b,5a-b
A2.6 Flow meter / sensor / switch, for activation of domestic hot water	0, 2a-b,3a-d,4a-b,5a-b
A2.7 Thermostatic mixing valve for DHW output	0, 2a-b,3a-d,4a-b,5a-b
A2.8 DHW anti-scald valve	0, 2a-b,3a-d,4a-b,5a-b
A2.9 Keep warm bypass valve electronic or mechanical	0, 4a-b,5a-b
A2.10 Mechanical or electrical sensors and devices that generate control signals to HIU keep warm control valves / actuators	4a-b,5a-b
A2.11 Sensors in wet pockets	0
A2.12 Control software HW	2a-b,3a-d,4a-b,5a-b
A2.13 Control software HTG	1a-f (4a-b, 5a-b depending on operation of control)

Full Test/Partial Test/Manufacturer declaration with results published to BESA website as an addendum
B1.1 Temperature sensors DHW if within tolerance +/-5%
B1.2 Temperature sensors HTG if within tolerance +/-5%
B1.3 Differential pressure control valve
B1.4 Pipe material/Pipe geometry (if no change to sensor position)
B1.5 Control software/firmware
B1.6 Primary isolating valves - insulated
B1.7 Any component not specifically listed in this document
B1.8 Any component from list C that is not accepted by BESA - discussion with Test house/ BESA about test required
B1.9 Change of location of components within the HIU / redesign of internal arrangement

Manufacturer self declaration publish to BESA website as an addendum
C1.1 Space heating strainer - if dP confirmed to be within the same tolerances
C1.2 Domestic hot water isolating valve/check valve
C1.3 Primary side strainer - if dP confirmed to be within the same tolerances
C1.4 Drain valves
C1.5 Vent valves and test points
C1.6 Circulation pump providing same or better energy efficiency rating applies and no change to pipework
C1.7 Heat meter if no change to dP
C1.8 Joints and connections with same internal bore (as long as covered by WRAS or equivalent)
C1.9 Gaskets with same internal bore (as long as covered by WRAS or equivalent)
C1.10 Expansion vessel like for like position
C1.11 Uninsulated chassis or casing
C1.12 Safety valves
C1.13 Indicator lamp or LED
C1.14 Integrated flushing bypass
C1.15 Shock absorber (incoming cold water)
C1.16 Secondary pressure gauge
C1.17 Primary isolating valves - uninsulated dP within the same tolerances