

Shock Approval Method

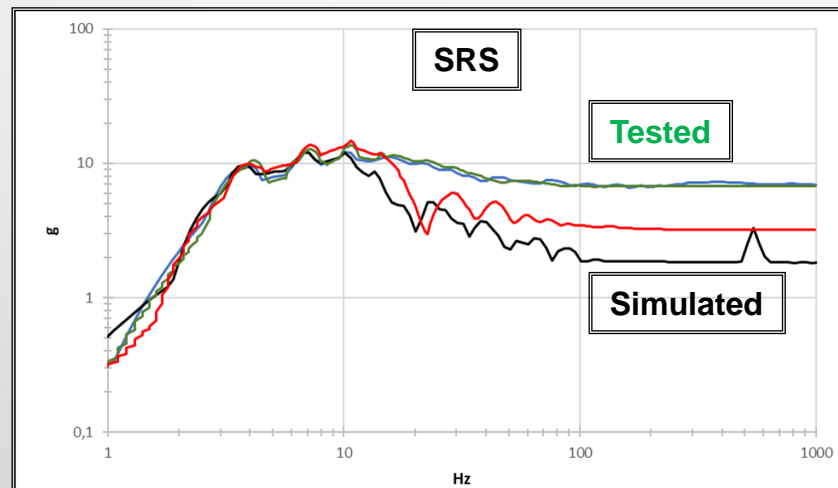
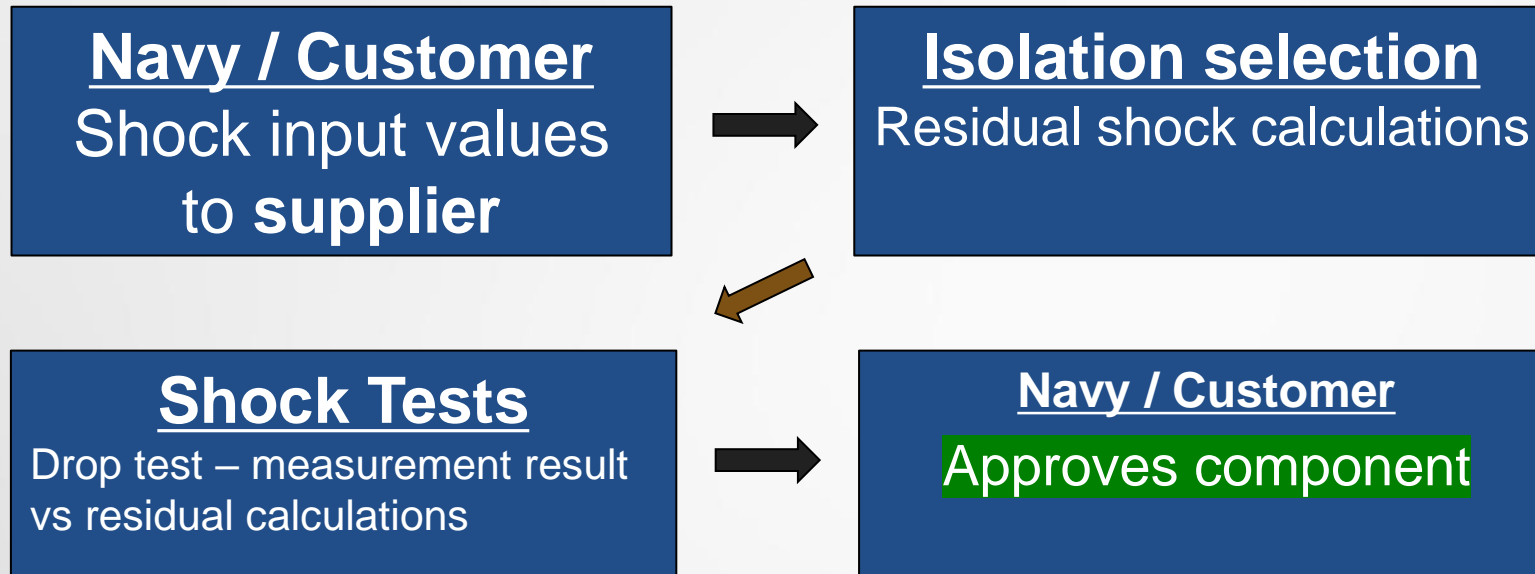
About Drop Test Method

- Drop test method is an alternative to shock test machine
 - Goal is to show that tested object can withstand certain shock level
 - Drop test method is proven to give equivalent shock loading compared to e.g. medium and heavy weight shock machines
- Drop test can be done in Vibrol premises in Tuusula or at supplier's own facility
 - Drop test will be done in all three directions
 - Suppliers product will be measured with shock sensor during drop test
 - Drop test can be done also for critical component(s) instead of entire product
- Result of the test is known right after test
 - Tested object need to work normal **and** measured response shock level need to exceed calculated level

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1. Shock input values are given at offer stage by navy / shipyard / customer
2. Vibrol will aid in selecting isolators (if needed)
 - Residual "G" will be calculated and presented in SRS format (shock response spectrum) according to navy rules
 - **Supplier** gives all necessary data of product (mass etc)
3. Vibrol will conduct a shock test and measure shock level (see restrictions: page 4)
 - Measured SRS curve will be compared to calculated curve
 - Shock test will be done for suppliers product or critical component inside the product according to navy/shipyard instructions
4. **Supplier** will test that product / component works after shock test
 - If product / component does not work: supplier will improve it and test it again – assistance for dynamic design is given if necessary
5. After successfull test – Navy / customer **approves** the product

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- **Suppliers** without experience in shock isolation will be assisted:
 - Consulting is given for proper isolation selection
 - Vibrol provides shock isolators

Restrictions of Drop Test Method

- IF the size of tested object is too big or complicated drop test method cannot be used
 - Exact weight limit does not exist it depends on available cranes and base
 - For example 30 ton object cannot be dropped in normal factory facility
 - In challenging cases supplier can select other test facility e.g. shipyard
 - Horizontal direction tests can be problematic in complex object