

*Oasys*



## Oasys GSA

Test Procedure Reference

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# Oasys GSA

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## GSA Test Procedure

GSA provides a method of running analysis to check the solvers. This allows a file or files with results to be re-analysed and the results compared with the previously analysed results. This is available on opening GSA from the "Tools | Run GSA Test Procedure" menu option.

### Running the test procedure

Invoking the test procedure gives a dialog to control what is to be tested. This dialog allows the user to set a value which is used when comparing numbers. Differences less than this 'zero' value are ignored. A specific solver option can be selected, but by default the solver is inferred from the analysis task specified in the test file. The default option is to run the test procedure, but this can also be used to update the test files.

The test procedure follows these steps:

1. Open the file
2. Make a new analysis task by copying the highest numbered analysis task
3. Run the analysis
4. Compare results from the two runs
5. Update the file (if new benchmark option is selected)

### Selecting test files

The file dialog allows the selection of multiple 'gwb' or 'gwa' files for testing, but for testing large sets of files it is more convenient to use a 'gwt' file. This file lists a set of folders and either the 'gwb' files or 'gwa' files in these folders are tested. An example test file is shown below

```
!  
! Dynamic tests  
!  
small  
basic  
large  
typical  
!  
! End of file
```

Lines starting with an '!' are comments and ignored by the test procedure. The lines small, basic, ... specify the folders to be tested. GSA looks for all the GSA files in each of these folders and these are tested in turn.

When the test are run GSA reports the number of files tested and the number passing/failing. It also produces a report of the form below giving details of the solve version – what is being tested (from the folder name) and a status (including the number of failures).

## GSA Test Report

**Program version: GSA version 10.0.0.32**

**Solver: GSS Modal Dynamic P-delta**

Solver version: GSS 52.1.0.32

Tester: Stephen Hendry

Computer: LDNPC57VBDD2

Operating system: NT 6.1 (build 7601)

Date: 12 Apr 2019

Time: 12:08:50

5 files selected to test

| No. | File   | Feature     | Status      | Comment | Initials |
|-----|--|-------------|-------------|---------|----------|
| 1   | C:\TestData\GSA_10\GSS_10\dyn_pd\pddyn2.gwlb                                 | dyn_pd      | <b>Pass</b> |         |          |
| 2   | C:\TestData\GSA_10\GSS_10\dyn_pd\pddyn3.gwlb                                 | dyn_pd      | <b>Pass</b> |         |          |
| 3   | C:\TestData\GSA_10\GSS_10\dyn_pd_s\pddyn2.gwlb                               | dyn_pd_s    | <b>Pass</b> |         |          |
| 4   | C:\TestData\GSA_10\GSS_10\dyn_pd_s\pddyn3.gwlb                               | dyn_pd_s    | <b>Pass</b> |         |          |
| 5   | C:\TestData\GSA_10\GSS_10\wall_dyn_pd\P-delta - modal dynamic - 10 wall.gwlb | wall_dyn_pd | <b>Pass</b> |         |          |

5 file(s) passed

0 file(s) failed or not tested

### Comments

## Tips

Some models may be selected which have good reason to 'fail' when tested. These may be models specifically design to test the solver at the limits of the numerical accuracy. The notes section in the titles can be used to record this and if the test fails this will be included in the comments section.

The link in the report file will open the file that has been tested to allow investigation.

Files which fail produce a report file which is stored alongside the data file. This gives a detailed picture of the reference results, the new results, the difference and flags up errors.