



BP SOLUTIONS

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pdfPost Tutorial

Customizing Color Legends.

This tutorial shows how to customize color legends. In pdfPost it is possible to manually override ranges and increase/decrease number of colors. It is also possible to set transparency level for each color.

- how to manually override color ranges;
- how to add/remove colors;
- how to set transparency level;

1. Setting up project

- a. Create/copy empty ANSYS database to the project directory of choosing;
- b. Unzip Tutorial4_Files.zip (valve.cdb, valve.s01, APDLtoPDF.lib, tutorial4.inp) to the project directory;
- c. Open ANSYS database and:
 - i. enter preprocessor - /PREP7
 - ii. deactivate element shape check - SHPP,OFF
 - iii. read CDB file - CDREAD,DB,valve,cdb
 - iv. read load step file - LSREAD,1
 - v. enter solution processor - /SOLU
 - vi. solve model - SOLVE

2. Saving geometry

- a. Create component to export:
 - i. select solid elements - ESEL,S,ENAME,,185
 - ii. create component - CM,valve,ELEM
 - iii. in project directory, create text file named "Compl_valve.txt". First line of this file should contain name of the component ("valve").
In case there are more components, each line should have single component name;
- b. load the APDLtoPDF.lib library - *ULIB,APDLtoPDF.lib
- c. create name for the PDF project - *USE,setProjectName,'valve'
- d. create default file names based on project name - *USE,setFileNames
- e. create pdfPost geometry input files - *USE,saveGeometry
- f. start XML configuration file and write geometry information:
 - i. *USE,initXml
 - ii. *USE,XmlDocument
 - iii. *USE,XmlComponents
 - iv. *USE,XmlETypes

3. Creating and storing results

- a. Create ETABLE for exported component:
 - i. enter postprocessor - /POST1
 - ii. create ETABLE for equivalent stress - ETABLE,SEQV,S,EQV
- b. Store ETABLE data and add plot data to XML configuration file:
 - i. *USE, writeEtable,'SEQV",-1e8,1e8,'S'
 - ii. *USE,XmlPlot
- c. Close XML configuration file and clear APDLtoPDF library variables:
 - i. *USE,endXml
 - ii. *USE,clearVars
 - iii. *ULIB

4. Modifying pdfPost XML configuration files

- a. Run pdfPost and open valve.xml created by procedure described in steps 1 to 3;
- b. Go to the “Plot” tab and right click on “Color Legend” input field. Select “Send to Legend Manager” option from context menu;
- c. In Legend Manager do the following:
 - i. remove third (0,255,178,255) and fifth (178,255,0,255) color;
 - ii. for the „undefined” color (0,0,0,255), set “Alpha” to 50;
 - iii. duplicate last one (255,0,0,255) and switch to magenta (255,0,220,255);
 - iv. save legend as “myLegend.xml” in project directory;
- d. Right click on “Color Legend” input field again and select myLegend.xml from “Working Directory” option;
- e. Do the following in “Value Ranges”:
 - i. select “Manual” from drop-down menu;
 - ii. in input field please type “5;10;20;30;40;45;50;55;{max}” (without quotation marks) – with these settings, stress ranges will be defined by values separated by semicolon. Additional {max} parameter is used to include maximum value from selected plot. “Undefined” color will be used for elements with stress value below 5 N/mm²;
- f. Save changes and create 3D PDF:
 - i. Save XML configuration file - CTRL+S
 - ii. Start conversion - CTRL+P
 - iii. Open created 3D PDF - CTRL+SHIFT+O

5. Other information

- a. If you're not ANSYS user, you can use files in subfolder "additionalFiles" and start this tutorial from step 4.
- b. Commands in this tutorial (steps 1 to 3) may be stacked up in a single input file (check [tutorial4.inp](#));
- c. Detailed information about APDLtoPDF library (arguments, method descriptions) can be found inside [APDLtoPDF.lib](#) file;
- d. APDLtoPDF macro library can be freely modified. This tutorial was prepared using APDLtoPDF [version 1.2](#). Suggestions and bugs can be reported at pdfPost@bpsolutions.com.pl;

Tutorial 4 - Customizing Color Legends

Equivalent Stress [N/mm²]



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pdfPost converter 1.9



ANSYS Mechanical Plug-in
in cooperation with MESco

Click to activate 3D content

