Plate Impact Testing with Instron CeastVIEW VisualIMPACT Software in MTIL

by David Farrow, Fall 2018

Staff - Power Up Dynatup Model 8200 System:

- Lab compressed air on
- Rebound brakes power on, brakes reset
- Tower box power on
- Clamp box power on, clamp functional
- DAQ box power on
- Safeties active (lit) and functional (door, clamp, brakes)
- Carriage in up position

Students - Start Software:

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• Start CeastVIEW software from desktop shortcut



• Test Process screen looks like this:







Initiate and Conduct a Test:

- CWMain [Impact process: 8200]

 File Analysis Management Process View Window Passwords Help

 Parameter Data Type: Not Loaded

 Select parameter

 Select test

 Select test

 Image: Comparison of the select test configuration

 Image: Comparison of the select test

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- Select parameter (test template)

• Choose Plate Test, OK

Plate Test 8/16/2017 11:25:06 AM Template Generic impact CUSTOMIZED STANDARD 23.0 TEMPLATE 8/15/2017 11:53:51 AM Template Generic impact CUSTOMIZED STANDARD 23.0	Plate Test 8/15/2017 11:25:06 AM Template Generic impact CUSTOMIZED STANDARD 23.0 TEMPLATE 8/15/2017 11:59:51 AM Template Generic impact CUSTOMIZED STANDARD 23.0	Name	Date		Parameter type	Test Type	Standard Name	Ten
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- Enter Operator (disciplinesection-group) e.g. M07-CD
- Enter Test Name (disciplinesection-group-material-temperature)
- Material = PMMA, PP, HDPE, ABS
- Temperature = RT, 0C, BW
- Example: M07-CD-PP-RT

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- Enter Specimen ID as material, temperature
- Measure clamp diameter (will be recorded as 76mm in datafile)
- Measure and enter falling height (drop height)
- Verify nominal added mass as 2.102 kg and total mass as 6.202 kg



DAQ box green Trigger On lamp should illuminate (wait for this)





• 3 green safeties should now be illuminated on control box

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Fire!

• Force vs. Time plot displays on screen after a short delay

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Test Name: M07-CD-PP-RT	Plate Test 6679 5/30/2018 4:03:32 PM Generic Impact CUSTOM/ZED STANDARD 23:000 0.000 0.000 0.920 I	0.000 0.003 Plate Impact, 76mm support dia, 12.7mm hemisp	sherical tup
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Scroll right to note Peak Force and (tentative)
 Total Energy absorbed



• Enter these data on whiteboard vs. test temperature

Critical step:



Process and Export Data to File:

- Pull down File menu, Open
- Choose test to process by filename





• Click on Force trace to locate red cursor, THEN drag it; F keys mark events

- F2 = Start Time (Red)
- F4 = Peak Force (Purple)
- F8 = End (Total) Time (Yellow---where Force returns to zero)
- CTRL F12 = Zoom out, CTRL F11 = Zoom in, CTRL F10 = Zoom Box
- Right click on plot for other plot options, if needed
- Ignore blue break cursor (F5) if it shows (can move off-screen)
- Mark three points of interest: Start (red), Peak (purple), and End (yellow)



- Can view other quantities, e.g. Energy, if desired
- Skip to page 9



• Optional - It is useful to plot Force and Energy together vs. Time:

- Use YR curves to overlay Energy Absorbed plot
- Toggle large plot from toolbar with arrowed tool:



• Here are Force and Energy vs. Time plotted large for teaching

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• Pull down File menu, Export Test Data, use Plate Output form

- Initiate next test---with new filename, START (top of page 3)
- Engage clamp box safety and reset brakes when done