Error Documentation

The following document is for recording potential errors that may occur with cook stove and heating stove tests. This will help develop a robust error checking system to help people check if they have entered values correctly and that their test results are correct.

Google docs version: https://docs.google.com/document/d/1oBxv2iPyxggVkU3UBNEznuLQl2-WN9F58rxlMIKf5Jk/edit?usp=sharing

# Template

Please follow this template for documenting errors:

**Variable/function Name:**

**ISO, IDC, both?:**

**What is the error (if value error, what is the range where error occurs?):**

**Is this an error where the user can proceed with warning or the user must be stopped and asked to correct before continuing?:**

**How to correct error:**

**Notes/comments:**

# Errors to Implement

# Implemented Error Checks

## Entry Errors

**Variable/function Name:** All entries requiring numbers

**ISO, IDC, both?:** Both

**What is the error (if value error, what is the range where error occurs?):** String error - entered as not a number

**Is this an error where the user can proceed with warning or the user must be stopped and asked to correct before continuing?:** Stopped

**How to correct error:** Enter as a number

**Notes/comments:**

**Variable/function Name:** All entries requiring times

**ISO, IDC, both?:** Both

**What is the error (if value error, what is the range where error occurs?):** Value error - not entered in the correct format

**Is this an error where the user can proceed with warning or the user must be stopped and asked to correct before continuing?:** Stopped

**How to correct error:** Enter in correct format

**Notes/comments:**

**Variable/function Name:** initial\_RH, final\_RH

**ISO, IDC, both?:** Both

**What is the error (if value error, what is the range where error occurs?):** Value is above 100

**Is this an error where the user can proceed with warning or the user must be stopped and asked to correct before continuing?:** Stopped

**How to correct error:** Enter lower value

**Notes/comments:**

**Variable/function Name:** fuel\_higher\_heating\_value

**ISO, IDC, both?:** Both

**What is the error (if value error, what is the range where error occurs?):** If the carbon fraction of the fuel is less than 0.75 and the higher heating value is more than 25,000 or less than 11,000

**Is this an error where the user can proceed with warning or the user must be stopped and asked to correct before continuing?:** Stopped

**How to correct error:** Correct carbon fraction or higher heating value

**Notes/comments:** Assumes that all fuel entered with a carbon fraction less than 0.75 is wood

**Variable/function Name:** fuel\_higher\_heating\_value

**ISO, IDC, both?:** Both

**What is the error (if value error, what is the range where error occurs?):** If the carbon fraction of the fuel is more than 0.75 and the higher heating value is more than 33,500 and less than 25,000

**Is this an error where the user can proceed with warning or the user must be stopped and asked to correct before continuing?:** Stopped

**How to correct error:** Correct carbon fraction or higher heating value

**Notes/comments:** Assumes that all fuel entered with a carbon fraction more than 0.75 is charcoal

**Variable/function Name:** cfrac

**ISO, IDC, both?:** Both

**What is the error (if value error, what is the range where error occurs?):** If the value is more than 1

**Is this an error where the user can proceed with warning or the user must be stopped and asked to correct before continuing?:** Stopped

**How to correct error:** Enter value less than 1

**Notes/comments:**

**Variable/function Name:** initial\_pot\_mass, final\_pot\_mass

**ISO, IDC, both?:** ISO

**What is the error (if value error, what is the range where error occurs?):** If the initial pot mass is more than the final pot mass

**Is this an error where the user can proceed with warning or the user must be stopped and asked to correct before continuing?:** Stopped

**How to correct error:** Change the values so the final pot mass is less than the initial

**Notes/comments:**

## Calculation Errors

**Variable/function Name:** eff\_w\_char

**ISO, IDC, both?:** ISO

**What is the error (if value error, what is the range where error occurs?):** If the value is more than 55% but less than 100%

**Is this an error where the user can proceed with warning or the user must be stopped and asked to correct before continuing?:** Warning

**How to correct error:** Check fuel and charcoal mass inputs, check change in water from start to end of phase, check change in water temperature from start to end of phase

**Notes/comments:** Between 55 and 100 doesn’t necessarily mean there’s an error but could indicate there is

**Variable/function Name:** eff\_w\_char

**ISO, IDC, both?:** ISO

**What is the error (if value error, what is the range where error occurs?):** If the value is more than 100%

**Is this an error where the user can proceed with warning or the user must be stopped and asked to correct before continuing?:** Warning

**How to correct error:** Check fuel and charcoal mass inputs, check change in water from start to end of phase, check change in water temperature from start to end of phase

**Notes/comments:** Over 100 means the value is incorrect

**Variable/function Name:** eff\_w\_char

**ISO, IDC, both?:** ISO

**What is the error (if value error, what is the range where error occurs?):** When the value is less than 10% but more than 0%

**Is this an error where the user can proceed with warning or the user must be stopped and asked to correct before continuing?:** Warning

**How to correct error:** Check fuel and charcoal mass inputs, check change in water from start to end of phase, check change in water temperature from start to end of phase

**Notes/comments:** A low value below 10% but above 0% does not mean it’s wrong but could indicate something was entered incorrectly

**Variable/function Name:** eff\_w\_char

**ISO, IDC, both?:** ISO

**What is the error (if value error, what is the range where error occurs?):** When the value is less than 0%

**Is this an error where the user can proceed with warning or the user must be stopped and asked to correct before continuing?:** Warning

**How to correct error:** Check fuel and charcoal mass inputs, check change in water from start to end of phase, check change in water temperature from start to end of phase

**Notes/comments:** Under 0% does mean something is incorrect

**Variable/function Name:** eff\_wo\_char

**ISO, IDC, both?:** ISO

**What is the error (if value error, what is the range where error occurs?):** If the value is more than 55% but less than 100%

**Is this an error where the user can proceed with warning or the user must be stopped and asked to correct before continuing?:** Warning

**How to correct error:** Check fuel mass inputs, check change in water from start to end of phase, check change in water temperature from start to end of phase

**Notes/comments:** Between 55 and 100 doesn’t necessarily mean there’s an error but could indicate there is

**Variable/function Name:** eff\_wo\_char

**ISO, IDC, both?:** ISO

**What is the error (if value error, what is the range where error occurs?):** If the value is more than 100%

**Is this an error where the user can proceed with warning or the user must be stopped and asked to correct before continuing?:** Warning

**How to correct error:** Check fuel mass inputs, check change in water from start to end of phase, check change in water temperature from start to end of phase

**Notes/comments:** Over 100 means the value is incorrect

**Variable/function Name:** eff\_wo\_char

**ISO, IDC, both?:** ISO

**What is the error (if value error, what is the range where error occurs?):** When the value is less than 10% but more than 0%

**Is this an error where the user can proceed with warning or the user must be stopped and asked to correct before continuing?:** Warning

**How to correct error:** Check fuel mass inputs, check change in water from start to end of phase, check change in water temperature from start to end of phase

**Notes/comments:** A low value below 10% but above 0% does not mean it’s wrong but could indicate something was entered incorrectly

**Variable/function Name:** eff\_wo\_char

**ISO, IDC, both?:** ISO

**What is the error (if value error, what is the range where error occurs?):** When the value is less than 0%

**Is this an error where the user can proceed with warning or the user must be stopped and asked to correct before continuing?:** Warning

**How to correct error:** Check fuel mass inputs, check change in water from start to end of phase, check change in water temperature from start to end of phase

**Notes/comments:** Under 0% does mean something is incorrect

**Variable/function Name:** char\_energy\_productivity or char\_mass\_productivity

**ISO, IDC, both?:** ISO

**What is the error (if value error, what is the range where error occurs?):** If value is less than 0 (charcoal was used instead of created)

**Is this an error where the user can proceed with warning or the user must be stopped and asked to correct before continuing?:** Warning

**How to correct error:** Check char mass, check gross calorific value, check that fuels were entered as their correct type

**Notes/comments:** Charcoal stoves may ignore this warning

**Variable/function Name:** char\_mass

**ISO, IDC, both?:** ISO

**What is the error (if value error, what is the range where error occurs?):** If the value is more than 0.05 (50 grams)

**Is this an error where the user can proceed with warning or the user must be stopped and asked to correct before continuing?:** Warning

**How to correct error:** Check that masses were entered correctly

**Notes/comments:** Doesn’t mean there’s an error, just more charcoal created than normal

**Variable/function Name:** initial\_water\_temp

**ISO, IDC, both?:** ISO

**What is the error (if value error, what is the range where error occurs?):** When the absolute difference between the value and the ambient temperature is more than 10

**Is this an error where the user can proceed with warning or the user must be stopped and asked to correct before continuing?:** Warning

**How to correct error:** No correction unless temperatures were entered wrong

**Notes/comments:** Only important for strict ISO tests

**Variable/function Name:** phase\_time

**ISO, IDC, both?:** ISO

**What is the error (if value error, what is the range where error occurs?):** When the value is less than 30

**Is this an error where the user can proceed with warning or the user must be stopped and asked to correct before continuing?:** Warning

**How to correct error:** No correction unless times were entered wrong

**Notes/comments:** Only important for strict ISO tests

**Variable/function Name:** phase\_time

**ISO, IDC, both?:** ISO

**What is the error (if value error, what is the range where error occurs?):** When the value is more than 35

**Is this an error where the user can proceed with warning or the user must be stopped and asked to correct before continuing?:** Warning

**How to correct error:** No correction unless times were entered wrong

**Notes/comments:** Only important for strict ISO tests

**Variable/function Name:** end\_water\_temp

**ISO, IDC, both?:** ISO

**What is the error (if value error, what is the range where error occurs?):** When the value is less than 5 degrees difference from the max water temperature and the phase time is less than 35 minutes

**Is this an error where the user can proceed with warning or the user must be stopped and asked to correct before continuing?:** Warning

**How to correct error:** No correction unless times or temperatures were entered wrong

**Notes/comments:** Only important for strict ISO tests

**Variable/function Name:** firepower\_w\_char\_mp

**ISO, IDC, both?:** ISO

**What is the error (if value error, what is the range where error occurs?):** If the medium firepower is between the high and low firepower +/- 1 kW

**Is this an error where the user can proceed with warning or the user must be stopped and asked to correct before continuing?:** Warning

**How to correct error:** No correction unless inputs are wrong

**Notes/comments:** Only important for strict ISO tests