# SUMMARIZED EVALUATION PROCEDURES

| | |
|---|---|
| **Stove** _____ | **Location** _____ |
| **Tester** _____ | **Date** _____ |

## 1. SHARP EDGES AND POINTS

**Equipment:** Cloth, rag, or loose clothing

| Rating | Description |
|---|---|
| Fair | Catches, tears |
| Best | Does not catch |

**Procedure:**

*a*) Rub cloth along exterior surfaces

*b*) Note if cloth catches / tears

**Result 1** ┆

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## 2. COOKSTOVE TIPPING          *(perform only if cookstove is portable)*

**Equipment:** Fuel, ruler / tape measure, calculator

**Procedure:**

*a*) Load stove with fuel but do not ignite

*b*) Pick a side to tip towards and measure the height of its highest point, place value into Table A

*c*) Slowly tip the cookstove in that direction until the stove can tip on its own, hold cookstove there

*d*) Measure the new height of the point, place value into Table A

*e*) Using a calculator, divide the tipped height by the standing height to find the ratio R, place into Table A

*f*) Repeat process as many times as there are legs on the stove, or four times for a circular base

*g*) Use the largest ratio in Table A with the metric in Table B to find the most deficient rating for the result

### A

| Run | Starting Height | Tipped Height | Ratio |
|---|---|---|---|
| 1 | \_\_\_\_\_ | \_\_\_\_\_ | \_\_\_\_\_ |
| 2 | \_\_\_\_\_ | \_\_\_\_\_ | \_\_\_\_\_ |
| 3 | \_\_\_\_\_ | \_\_\_\_\_ | \_\_\_\_\_ |
| 4 | \_\_\_\_\_ | \_\_\_\_\_ | \_\_\_\_\_ |
| 5 | \_\_\_\_\_ | \_\_\_\_\_ | \_\_\_\_\_ |
| 6 | \_\_\_\_\_ | \_\_\_\_\_ | \_\_\_\_\_ |

### B

| Rating | Ratio |
|---|---|
| Poor | $R > 0.978$ |
| Fair | $0.961 < R < 0.978$ |
| Good | $0.940 < R < 0.961$ |
| Best | $R < 0.940$ |

**Result 2** ┆

## 3. CONTAINMENT          *(perform only if cookstove is portable)*

**Equipment:** Fuel

**Procedures:**
*a*) The cookstove should be stocked with fuel but not ignited
*b*) Allow cookstove to tip and fall over four times in each tipping direction
*c*) record the number of times wood falls from the stove
*d*) Sum this number to find the total times wood fell from the cookstove

| Direction | Number of Instances |
|-----------|---------------------|
| 1 | _____ |
| 2 | _____ |
| 3 | _____ |
| 4 | _____ |
| 5 | _____ |
| 6 | _____ |

**Total** _____

| Rating | Amount (n) |
|--------|-----------|
| Poor | $n \geq 9$ |
| Fair | $6 \leq n \leq 8$ |
| Good | $3 \leq n \leq 5$ |
| Best | $n \leq 2$ |

**Result 3** [          ]

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## 4. EXPULSION OF EMBER

**Equipment:** Fuel, ruler / tape measure, small cookpot

**Procedure:**
*a*) The cookstove should be stocked with fuel but not ignited
*b*) Place small cookpot onto burner
*c*) Measure smallest distance across each gap through which fuel can be seen
*d*) Compare largest measured distance, D, to find the rating

| Rating | Hole Size (cm) |
|--------|----------------|
| Poor | $D > 5$ |
| Fair | $3 < D < 5$ |
| Good | $1 < D < 3$ |
| Best | $D < 1$ |

**Largest** _____

**Result 4** [          ]

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## 5. OBSTRUCTIONS NEAR COOKING SURFACE

**Equipment:** Ruler / tape measure

**Procedure:**
*a*) Inspect cookstove for skirt, do not perform if skirt is present
*b*) Measure height difference between the cooking surface and obstructions surrounding the cooking surface
*c*) Use the largest height difference, D, to find the rating

| Rating | Difference (cm) |
|--------|-----------------|
| Poor | $D > 4$ |
| Fair | $2.5 < D < 4$ |
| Good | $1 < D < 2.5$ |
| Best | $D < 1$ |

**Largest** _____

**Result 5** [          ]

# 6. SURFACE TEMPERATURE; 7. HEAT TRANSMISSION TO SURROUNDINGS; 8. HANDLE TEMPERATURE   *(do not perform test 7 - wall & floor - if mounted)*

**Equipment:** Fuel, igniter, chalk, ruler / tape measure, hand-held thermocouple

**Procedure:**

*a*) Chalk 8 x 8 cm grid onto cookstove and also within an outline of cookstove on the floor if within 5 cm of undercarriage, and within an outline of cookstove onto the wall if within 10 cm, while continuing the grid 16 cm higher up the wall than the top of the cookstove

*b*) Chalk extra thick lines at 0.9 m and 1.5 m onto cookstove, if applicable  *c*) Ignite fuel and continue up to step 'g' then wait at that step until cookstove has reached max temp before proceeding, adding fuel when necessary

*d*) Device a convenient method for your stove that will tell what data taken corresponds to which data point tested

*e*) Measure air temp *f*) Compute values for Tables B by adding air temp to temps located in Tables A

*g*) Take data using thermocouple at grid intersections *h*) Start with wall and floor by moving cookstove away to take measurements for up to one minute, then return cookstove for at least five minutes, taking surface temp and handle temp data while waiting, repeat step 'h' until all data points have been checked

*i*) Find max temps for all scenarios *j*) Find which rating is given by the max temp using Tables B

*k*) Use most deficient ratings for the results

**Air temp** _____

## SURFACE TEMPERATURE

| | Rating | Below child-line (< 0.9 m) | | Above child-line (> 0.9 m) | |
|---|---|---|---|---|---|
| | | Metallic | Nonmetallic | Metallic | Nonmetallic |
| **6A** | Poor | T > 50 | T > 58 | T > 66 | T > 74 |
| | Fair | 44 < T < 50 | 52 < T < 58 | 60 < T < 66 | 68 < T < 74 |
| | Good | 38 < T < 44 | 46 < T < 52 | 54 < T < 60 | 62 < T < 68 |
| | Best | T < 38 | T < 46 | T < 54 | T < 62 |
| **6B** | Poor | T > ___ | T > ___ | T > ___ | T > ___ |
| | Fair | ___ < T < ___ | ___ < T < ___ | ___ < T < ___ | ___ < T < ___ |
| | Good | ___ < T < ___ | ___ < T < ___ | ___ < T < ___ | ___ < T < ___ |
| | Best | T < ___ | T < ___ | T < ___ | T < ___ |
| | **Max/Rating** | ___ / _____ | ___ / _____ | ___ / _____ | ___ / _____ |

## HEAT TRANSFER TO THE ENVIRONMENT

| | Rating | Floor | Wall |
|---|---|---|---|
| **7A** | Poor | T > 65 | T > 80 |
| | Fair | 55 < T < 65 | 70 < T < 80 |
| | Good | 45 < T < 55 | 60 < T < 70 |
| | Best | T < 45 | T < 60 |
| **7B** | Poor | T > ___ | T > ___ |
| | Fair | ___ < T < ___ | ___ < T < ___ |
| | Good | ___ < T < ___ | ___ < T < ___ |
| | Best | T < ___ | T < ___ |
| | **Max/Rating** | ___ / _____ | ___ / _____ |

## HANDLE TEMPERATURE

| | Rating | Metallic | Nonmetallic |
|---|---|---|---|
| **8A** | Poor | T > 32 | T > 44 |
| | Fair | 26 < T < 32 | 38 < T < 44 |
| | Good | 20 < T < 26 | 32 < T < 38 |
| | Best | T < 20 | T < 32 |
| **8B** | Poor | T > ___ | T > ___ |
| | Fair | ___ < T < ___ | ___ < T < ___ |
| | Good | ___ < T < ___ | ___ < T < ___ |
| | Best | T < ___ | T < ___ |
| | **Max/Rating** | ___ / _____ | ___ / _____ |

| Result 6 | | Result 7 | | Result 8 | |
|---|---|---|---|---|---|

## 9. FLAMES SURROUNDING COOKPOT

**Equipment:** Cookpot

**Procedure:**
*a*) Keep cookstove fully ablaze from previous tests
*b*) Place cookpot into position
*c*) Observe the amount of uncovered flames surrounding the cookpot and record a description
*d*) Compare description with table to find rating
*e*) Remove cookpot

| Rating | Amount of Uncovered Flames Touching Cookpot |
|--------|---------------------------------------------|
| Poor | entire cookpot and/or handles |
| Fair | most of cookpot, not handles |
| Good | less than 4 cm up the sides, not handles |
| Best | none |

**Result 9**

**Description** _____

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## 10. FLAMES EXIT FUEL MAGAZINE

**Equipment:** None

**Procedure:**
*a*) Keep cookstove fully ablaze from previous tests  *b*) Visually inspect the amount, if any, of flames coming out of the fuel chamber and record a description  *c)* Compare description to Table to find rating

| Rating | Location of Fire |
|--------|------------------|
| Poor | Flames protrude |
| Best | Flames are contained |

**Result 10**

**Description** _____

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## OVERALL COOKSTOVE SAFETY RATING

| Rating | Quantity | | Weight | | Total |
|--------|----------|---|--------|---|-------|
| Poor | ____ | x | 1 | = | _____ |
| Fair | ____ | x | 2 | = | _____ |
| Good | ____ | x | 3 | = | _____ |
| Best | ____ | x | 4 | = | _____ |

| Rating | Sum (s) |
|--------|---------|
| Poor | $s \leq 16$ |
| Fair | $17 \leq s \leq 25$ |
| Good | $26 \leq s \leq 34$ |
| Best | $s \geq 35$ |

*SUM*

*Overall Rating*