

ROCK TUMBLING INSTRUCTIONS

Tools & Supplies:

Grit, Coarse (1F or 60/90)
 Grit, Fine (2F or 120/220)
 Silicon Sand (pre-polish compound or 600 grit abrasive)
 Polish, Commercial (tin oxide or cerium oxide)
 Pellets, Plastic (add to pre-polish and polish stages)
 Baking Soda (1/2 teaspoon)
 Snow White Soap Flakes (polish stage)
 Sugar, Granulated (2x grit amount pre-polish and polish)
 Rocks
 Tumbler
 Barrel (extra dedicated to polish phase only)

| Moh's Scale of Hardness | |
|-------------------------|----|
| Talc | 1 |
| Gypsum | 2 |
| Calcite | 3 |
| Flourite | 4 |
| Apatite | 5 |
| Orthoclase | 6 |
| Quartz | 7 |
| Topaz | 8 |
| Corundum (natural) | 9 |
| Diamond | 10 |

(Stone Selection)

1. Select rocks with color and interesting pattern
2. Sort rocks by type, size, and like hardness (will lose approx. 30% size)
3. Eliminate rocks with flaws (pitting, fractures)
4. Choose a balanced load (equal number of large, mid-sized, small rocks)
 (size of each rock can vary from ½" to 1-½" in diameter)

FOUR STEP PROCESS

| Tablespoons of Grit Required | | | | |
|-------------------------------------|-----------------------------------------------------------|-------------------------------------------------------------|----------------------------------------------------------------------------------|-----------------------------------------------------------------|
| Barrel Capacity in lbs. | <u>STEP 1</u> Silicon Carbide Grade 1F or 60/90 | <u>STEP 2</u> Silicon Carbide Grade 2F or 120/220 | <u>STEP 3</u> Silicon Carbide Pre-Polish Compound or 600-Grit Abrasive | <u>STEP 4</u> Polish Tin Oxide or Cerium Oxide Plus 4 |
| 1.5 | 4 | 4 | 6 | See chart |
| 3 | 4 | 4 | 6 | Below for |
| 4.5 | 8 | 8 | 10 | High polish |
| 6 | 10 | 10 | 12 | ingredients |
| 12 | 20 | 20 | 25 | |

STEP 1 - Rough Grinding (rounds the rock)

1. Rinse rocks prior to loading barrel
2. Fill tumbler barrel **2/3rds** to 3/4ths full with clean rocks
3. Add grit (amount determined by barrel capacity - see chart)
4. Add **½ teaspoon baking soda** (some tumblers don't recommend check book)
5. Add water to just below top layer of rocks (center of top layer of rocks)
6. Place lid on barrel (ensure tight seal)
7. Place barrel on tumbler and start tumbler
8. Check for leaks in about 10 to 15 minutes
9. Run tumbler for **7 days**
10. End of week, remove barrel from tumbler, and check a few rocks
11. Rocks are ready for step 2 if they have a "**frosted**" look when dry
12. Check for rough edges
13. If not ready, run tumbler **3 more days**
14. Thoroughly clean rocks and barrel
 - Use a plastic colander over 5 gallon bucket to drain
 - Use old toothbrush and water on each rock
 - Remove all traces grit or polish on each rock
 - Remove pitted and broken rocks between each step

STEP 2 - Medium Grinding (removes deep scratches)

1. Load rough ground rock to **proper level**
2. Add **plastic pellets** to bring load to proper level (if needed)
3. Add grit (amount determined by barrel capacity - see chart)
4. Add water to just below top layer of rocks (center of top layer of rocks)
5. Place lid on barrel (ensure tight seal)
6. Place barrel on tumbler and start tumbler
7. Check for leaks in about 10 to 15 minutes
8. Run tumbler for **7 days**
9. End of week, remove barrel from tumbler, and check a few rocks
10. Rocks are ready for step 3 if they have a smooth "**frosted**" look when dry
11. Check for rough edges
12. If not ready, run tumbler **3 more days**
13. Thoroughly clean rocks and barrel
 - Use a plastic colander over 5 gallon bucket to drain
 - Use old toothbrush and water on each rock
 - Remove all traces grit or polish on each rock
 - Remove pitted and broken rocks between each step
14. If plastic pellets used, clean and place aside for re-use (in same grit)

STEP 3 - Fine Grinding (Pre-polish removes fine scratches)

1. Place rocks gently into tumbler
2. Add **plastic pellets** to bring load to proper level (if needed)
3. Add grit and sugar (amount determined by barrel capacity - see chart)
4. Add water to just below top layer of rocks (center of top layer of rocks)
5. Place lid on barrel (ensure tight seal)
6. Place barrel on tumbler and start tumbler
7. Check for leaks in about 10 to 15 minutes
8. Run tumbler for **7 to 10 days**
9. End of week, remove barrel from tumbler, and check a few rocks
10. Rocks are ready for step 4 if they have a smooth "**mat**" finish free of pits or scratches when dry
11. Check for rough edges
12. If not ready, run tumbler **3 more days**
13. Thoroughly clean rocks and barrel
 - Use a plastic colander over 5 gallon bucket to drain
 - Use old toothbrush and water on each rock
 - Remove all traces grit or polish on each rock
14. If plastic pellets used, clean and place aside for re-use (in same grit)

STEP 4 - Polishing (adds gloss shine)

1. Check each rock carefully
2. Remove rocks with pits, fine chips, or flaking
3. If pitted, set aside to re-tumble in step 3 fine grinding
4. Place rock gently into tumbler
5. Add **plastic pellets** to bring load to proper level (if needed)
6. Add grit, soap flakes, sugar (to achieve high polish - see chart below)
7. Add water to just below top layer of rocks (center of top layer of rocks)
8. Place lid on barrel (ensure tight seal)
9. Place barrel on tumbler and start tumbler
10. Run tumbler for **4 to 7 days** (check progress occasionally)
11. End of week, remove barrel from tumbler, and check a few rocks
12. Thoroughly clean rocks and barrel
 - Use a plastic colander over 5 gallon bucket to drain
 - Use old toothbrush and water on each rock
 - Remove all traces grit or polish on each rock
13. If plastic pellets used, clean and place aside for re-use (in same grit)
14. Check for shine, rocks should look the same wet or dry

| | POLISHING STAGE Tablespoons of Grit Required | | |
|-------------------------|---------------------------------------------------|-----------------------------------------|-----------------------------------|
| Barrel Capacity in lbs. | <u>STEP 4</u> Polish Tin Oxide or Cerium Oxide | <u>STEP 4</u> Snow White Soap Flakes | <u>STEP 4</u> Granulated Sugar |
| 1.5 | 2 | 4 | 2 |
| 3 | 2 | 4 | 2 |
| 4.5 | 4 | 8 | 4 |
| 6 | 6 | 12 | 6 |
| 12 | 8 | 16 | 8 |

BONUS - Add **sugar** to pre-polish and polish stages (**twice as much sugar as pre-polish and polish**).

Plastic Pellets - Can be re-used about 10 or 12 times. Use only in the same grit originally used in. They will contaminate if transferred to next steps.

Vibrating tumbler - Noisier, more expensive, need to be monitored, take 1 week to finish rocks.

Rotary tumbler - Check every day or two, takes 4 to 6 weeks to finish rocks.