



The Coffee Quality Control Reference Guide

Target Parameters, Diagnostic Tools, and Action Steps for Water Quality, Grind Size, and Brewing Temperature

How to Use This Guide

Three variables control what ends up in the cup: water quality, grind size, and brewing temperature. Use Part 1 to establish and verify target parameters at each location. Use Part 2 to diagnose quality problems when something tastes off. Use Part 3 to confirm your filtration, grinder, and equipment are performing within spec.

PART 1: Target Parameters by Variable

Water Quality Targets (Based on Specialty Coffee Association brewing water standards)

Parameter	Target	Acceptable Range
Total Dissolved Solids (TDS)	150 ppm	75–250 ppm
Calcium Hardness	50–175 ppm	50–175 ppm
Total Alkalinity	40 ppm	40–70 ppm
pH	7.0	6.5–7.5
Chlorine	0 ppm	0 ppm
Sodium	10 ppm	Under 30 ppm

Brewing Temperature Targets

Brew Method	Target Temperature	Acceptable Range
Filter / Drip Coffee	200°F (93°C)	195°F–205°F (91°C–96°C)
Espresso	93°C (199°F)	90°C–96°C (194°F–205°F)
Tea — Black	212°F (100°C)	208°F–212°F
Tea — Green	175°F (79°C)	170°F–180°F
Tea — Herbal	212°F (100°C)	205°F–212°F
Hot Water Dispensing	190°F–200°F	Per application

Grind Size Guidance by Brew Method

Brew Method	Grind Target	Reference Feel
Drip / Filter Brewer	Medium	Similar to coarse sand
Espresso	Fine	Similar to table salt
French Press / Cold Brew	Coarse	Similar to breadcrumbs
Pour Over	Medium-Fine	Between sand and salt

Note: Grind settings vary by machine, bean, and roast. Use these as starting reference points and adjust based on extraction taste test.

Hold Time Limits

Product	Maximum Hold Time	Action After Limit
Drip coffee — open carafe / warming plate	30 minutes	Discard and brew fresh
Drip coffee — sealed thermal carafe	60 minutes	Discard and brew fresh
Espresso shot — unfinished beverage	Immediate use only	Do not hold
Brewed tea — hot	30–45 minutes	Discard and brew fresh

PART 2: Quality Diagnostic Tool

When a cup tastes wrong, match the flavor description to the most likely cause and action.

What the Cup Tastes Like	Most Likely Variable	Most Likely Cause	First Action
Weak, watery, flat, no body	Water or Grind or Temperature	TDS too low · Grind too coarse · Brew temp too low · Under-dosed	Check water TDS · Adjust grind finer · Verify brew temperature
Sour, sharp, acidic	Temperature or Grind or Water	Brew temp too low · Grind too coarse · Low alkalinity in water	Verify brew temperature · Adjust grind · Check water alkalinity
Bitter, harsh, astringent	Grind or Temperature or Hold Time	Grind too fine · Brew temp too high · Coffee held too long	Adjust grind coarser · Verify brew temp · Check hold time
Flat, muted, lacks brightness	Water	High alkalinity · Stale coffee	Check water alkalinity · Verify coffee freshness
Chemical, medicinal, or chlorine taste	Water	Chlorine or chloramine in water supply · Filter at capacity	Check filter status · Replace cartridge · Test filtered water
Salty or mineral taste	Water	Sodium too high · TDS too high	Test water chemistry · Review filtration specification
Inconsistent — sometimes good, sometimes off	Grind or Equipment	Worn burrs producing uneven particle size · Temperature drift from scale buildup · Inconsistent dosing	Check burr condition · Schedule descaling · Verify dose consistency
Good at peak, poor during slow periods	Hold Time	Coffee sitting beyond maximum hold time during low-traffic windows	Enforce hold time limits · Reduce batch size during slow periods
Varies by location — same recipe, different result	Water	Water chemistry differs between sites · Filter specification not matched to local water	Test water at each site · Confirm filtration is correctly specified per location
Good at open, degrades through shift	Equipment / Temperature	Brew temperature drifting as scale accumulates · Grinder warming affecting grind consistency	Schedule descaling · Check temperature at multiple points in shift

PART 3: Shift-Level Quality Verification Checklist

Run through this at the start of each shift and after any equipment cleaning or service.

Water

- ☐ Filter replacement date confirmed — not past replacement interval for your volume
- ☐ No chlorine or off-flavor detectable in a glass of plain filtered water
- ☐ TDS reading within 75–250 ppm range (check monthly with inexpensive TDS meter)

Brew Temperature

- ☐ Equipment confirmed at operating temperature before first brew or shot of the shift
- ☐ No unusual delay in reaching temperature compared to normal warm-up time
- ☐ If temperature verification equipment is available — confirmed within target range



Grind

- ☐ Grind output checked against your defined standard — particle size consistent, no excessive fines or large chunks
- ☐ No unusual noise from grinder during operation
- ☐ Grinder purged of any stale grounds at shift start

Cup Quality Taste Check

- ☐ First brewed cup of the shift tasted and confirmed acceptable before serving customers
- ☐ No sourness, bitterness, chemical flavor, or flatness detected
- ☐ Aroma consistent with expected product

Hold Time

- ☐ All brewed coffee confirmed within hold time limits at shift start
- ☐ Any product past the limit discarded before service begins
- ☐ Batch sizes appropriate for current traffic level — not over-brewing for the period

PART 4: Multi-Site Standards Verification Log

Use this to confirm each location is operating within target parameters. Complete during quality audits or manager visits.

Location	Water TDS	Filter Last Replaced	Brew Temp Verified	Grind Checked	Hold Time Observed	Issues Noted	Follow-Up Required

PART 5: When to Call Your Vendor or Service Provider

- ☐ Brew temperature consistently outside target range despite normal operation — heating element or thermostat issue
- ☐ TDS or water chemistry outside range despite recent filter replacement — filter specification may not match local water
- ☐ Grind inconsistency persisting after setting adjustment — burrs likely worn and need replacement
- ☐ Equipment taking longer than normal to reach operating temperature — scale accumulation on heating element
- ☐ Chemical or off-flavor persisting after filter replacement — request water quality test from filtration provider
- ☐ Quality inconsistency between locations using the same recipe — request water quality test at each site and compare

PART 6: Quick Reference: Flavor Problem → Variable → Action

Flavor Problem	Check First	Check Second	Check Third
Weak / Watery	Dose and grind	Water TDS	Brew temperature
Sour / Acidic	Brew temperature	Grind size	Water alkalinity
Bitter / Harsh	Grind size	Brew temperature	Hold time
Flat / Muted	Water alkalinity	Coffee freshness	Hold time
Chemical / Off	Water filtration	Filter age	Cleaning residue
Inconsistent	Burr condition	Temperature stability	Hold time discipline