

Technical Specification: Search Engine Optimization (SEO) Standards

Audience: Development, Marketing, and QA Teams

1. Executive Summary

This document establishes the mandatory baseline requirements for Search Engine Optimization (SEO) across all public-facing web properties. The objective is to maximize organic search visibility by ensuring technical excellence, crawlability, and adherence to search engine guidelines (specifically Google Search Essentials).

2. Terminology & Compliance

- **MANDATORY (MUST):** Critical for indexing. Failure to comply effectively removes pages from search results.
 - **RECOMMENDED (SHOULD):** Best practice for ranking higher, though not strictly required for indexing.
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3. Technical SEO Standards (TECH)

TECH-01: Crawlability & Indexing

- **TECH-01.1:** A `robots.txt` file **MUST** be present at the root domain, clearly defining allow/disallow directives.
- **TECH-01.2:** An XML Sitemap **MUST** be auto-generated and submitted to search consoles. It should only contain canonical, status-200 URLs.
- **TECH-01.3:** Canonical Tags (`rel="canonical"`) **MUST** be self-referencing on all unique pages to prevent Duplicate Content issues.
- **TECH-01.4:** Faceted navigation (e.g., sort/filter parameters) **MUST** be handled via `canonical` tags or `robots.txt` exclusions to prevent "spider traps" and index bloat.

TECH-02: Rendering & Architecture

- **TECH-02.1:** For Single Page Applications (SPAs), Server-Side Rendering (SSR) or Static Site Generation (SSG) **MUST** be used for public content. Client-side only rendering is prohibited for critical landing pages.
- **TECH-02.2:** URLs **MUST** be semantic, lowercase, and use hyphens for separation (e.g., `/products/blue-widget`, not `/products?id=123`).
- **TECH-02.3:** Trailing slashes **MUST** be consistent. Enforce a global redirect rule to either add or remove trailing slashes (never both).

TECH-03: Performance (Core Web Vitals)

- **TECH-03.1:** Largest Contentful Paint (LCP) **MUST** occur within **2.5 seconds**.
 - **TECH-03.2:** Interaction to Next Paint (INP) **MUST** be below **200 milliseconds**.
 - **TECH-03.3:** Cumulative Layout Shift (CLS) **MUST** be less than **0.1**.
 - **TECH-03.4:** Images **SHOULD** be served in modern formats (WebP/AVIF) with explicit `width` and `height` attributes to prevent layout shifts.
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4. On-Page & Semantic Standards (PAGE)

PAGE-01: Metadata & Structure

- **PAGE-01.1:** Every indexable page **MUST** have a unique `<title>` tag (50-60 characters) and `<meta name="description">` (150-160 characters).
- **PAGE-01.2:** Header tags (H1-H6) **MUST** follow a strict hierarchy.
 - *Constraint:* There **MUST** be exactly one `<h1>` per page.
- **PAGE-01.3:** Structured Data (Schema.org) **SHOULD** be implemented using JSON-LD for key entities (e.g., `Product`, `Article`, `BreadcrumbList`, `Organization`).

PAGE-01: Accessibility & Media

- **PAGE-02.1:** All informative images **MUST** possess descriptive `alt` text.
 - **PAGE-02.2:** Links **MUST** use descriptive anchor text (e.g., "View Pricing" instead of "Click Here").
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5. Operations & Maintenance (OPS)

OPS-01: Status Codes & Redirects

- **OPS-01.1:** Deleted content **MUST** return a `404` (Not Found) or `410` (Gone). Soft 404s (returning 200 OK for a "Not Found" page) are prohibited.
- **OPS-01.2:** Permanent moves **MUST** use `301` redirects. `302` (temporary) redirects **SHOULD** only be used for short-term maintenance or A/B testing.
- **OPS-01.3:** Redirect chains (A -> B -> C) **MUST** be avoided; link directly from A to C.

OPS-02: Internationalization (If applicable)

- **OPS-02.1:** `hreflang` tags **MUST** be implemented for all multi-regional or multi-lingual content to indicate target audience.
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6. Review & Enforcement

Role	Responsibility
Developer	Implement SSR, Schema, and Core Web Vitals optimizations.
SEO Specialist	Define keyword strategy, title tags, and review XML sitemaps.
QA Team	Validate structured data and ensure no broken links (404s) in pre-prod.