

DAP.com MVP Technical Requirements

Purpose & Operating Principles for This Technical Document

This document is the **single source of truth** for how our web components behave across the DAP site. It translates product intent and design into **build-ready specifications**, covering functionality, mobile behavior, accessibility, analytics, and QA acceptance for each component. It exists to keep Design, Engineering, Content, SEO/Analytics, and QA aligned so we can ship consistently, quickly, and compliantly.

What this document is:

- A **living system spec** that defines how components work (not just how they look).
- The canonical reference for:
 - **Functionality** & interaction rules
 - **Mobile considerations**
 - **Accessibility (WCAG 2.2 AA)**
 - **Analytics events & data contracts**
 - **QA/Acceptance criteria**
 - **Dependencies** (CMS/PIM, OneTrust, search, localization)
- A contract between teams so implementations are **predictable, testable, and reusable**.

What this document is not:

- Not a marketing guide or content style manual.
- Not a pixel-perfect design file (it complements the design system and figma).
- Not a code library, implementation details live in code; this doc specifies **behavior and requirements**.

Design Requirements

- **All visual design requirements live in the Figma comps** (layouts, spacing, typography, colors, iconography, imagery, component variants, and responsive breakpoints).
- The **client has formally approved** the current Figma design direction. This constitutes a **design freeze** for this build.

- From this point forward, **no redesigns or direction changes** (new layouts, new components, major style shifts) are in scope.

Figma is the **visual** source of truth. This technical document is the **behavioral/functional** source of truth. Both must agree.

Document approvals

To ensure alignment of functionality, technical requirements, user experience, and global alignment it is important to have all applicable teams review this document upon completion and bring any issues to the table before approvals are complete. Once approvals are complete, a document record is stored for historical reference and any changes or updates must be communicated to the entire team.

Document approval: Client

Departmental Approval	Approver Name	Signature / Electronic Approval	Date
PIM Team			
Ecommerce Team			
Marketing Team			

Document approval: Ntara

Departmental Approval	Approver Name	Signature / Electronic Approval	Date
Development Team	Haris Hercegovac	Haris Hercegovac	6 th Oct 2025
Strategic Services	Resham Mirpuri	Resham Mirpuri	10/13/2025
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Pages and Components:

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- Where to Buy Modal
- User Generated Content

Global Navigation

First navigation (utility links)

These are always visible in the header, typically used for quick access to high-value tools and site utilities:

- **TDS/SDS:** Links directly to pre filtered Resource landing page with technical data sheets and safety data sheets.
- **Ask the Expert :** Links to Zendesk form
- **Careers :** Links to careers page
- **USA-EN** (language/country selector): Dropdown to switch region/language.

Second navigation (primary site structure)

- **Products:** Parent category for product groupings
- **Resources:** Parent category for support and guidance materials
- **About:** Parent category for company, mission, values, and background

Interaction behavior:

- These **main navigation items expand upon click** (not hover)
- Once expanded, the user sees a dropdown (child-level pages)
- To continue, the user must **click again** on the specific child page link in the dropdown to load that page.

Call-to-action elements in the header

- **Search bar:** “Search for DAP products and resources” (user-initiated keyword search)
- **Where to Buy:** CTA directing users to retail/distributor locations.

Sticky behavior (sub-section)

- Hide on scroll down; **reappear** on scroll up $\geq 24\text{--}48\text{px}$ or when approaching footer via IntersectionObserver (IO sentinel at page end).
- Snap in with 8–12px translate animation (respect reduced motion).
- Option: compact sticky (smaller height, condensed logo).

Mobile

- Off-canvas drawer with **focus trap** and **body scroll lock**.
- Accordion submenus; back button within panel.
- Large hit targets ($\geq 44\text{px}$). Close on route change.

A11y

- `<header> + <nav aria-label="Primary">`.
- Menu button pattern: each trigger has aria-expanded, aria-controls; Esc closes current menu; arrow keys navigate items; Tab cycles properly.
- Keep tab order logical when menus are closed.

- Ensure consistent button behavior for expand/contract on top level nav items (space or enter)
- Avoid keyboard traps where “tab navigation” gets stuck in a loop or dead end

Analytics

- nav_open (entry, device), nav_link_click (path), search_open, sticky_show/hide.

QA

- Sticky does not flicker on minor scrolls; no overlap with cookie/chat widgets.
- Keyboard can open/close and traverse all items.
- For consistency, ensure the tablet/desktop breakpoint is at 1200px to allow for 1280px browser window width minus a buffer for scrollbars and browser window.
- Ensure all top level links, Search Bar, and Where to Buy CTA are displayed at all Desktop viewport sizes (1280, 1366, 1600, 1920px widths)

Global Footer

Functionality

- Global, appears on all pages.
- Sections: social (official DAP links), utility links, policies, copyright.

Mobile

- Stacked sections; optional collapsible groups.

A11y

- <footer> landmark; icons have accessible names.
- Ensure there are no keyboard or screen reader traps

Analytics

- footer_link_click, social_click.

QA

- All links resolve; social go to official profiles.

Social links

- **LinkedIn** → DAP's official LinkedIn page
- **Instagram** → DAP's official Instagram account
- **YouTube** → DAP's official YouTube channel
- **Facebook** → DAP's official Facebook page
- **TikTok** → DAP's official TikTok account

Footer links

- Warranty
- Contact Us
- Where to Buy (highlighted CTA)
- Terms of Use
- Privacy Policy
- California Supply Chain Act
- Cookie Policy
- Cookie Settings

PRO and DIY Experience Selector

Website users arriving at the homepage will encounter the Experience Selector toggle

- Default selection will be "Professional" on first visit
- Users can switch between Professional and DIY modes
- Selection will immediately redirect to the chosen homepage
- Selection will persist via cookie/local storage for return visits (subject to consent)

- If storage is denied/blocked, site will default to Professional on new sessions

Test Experience Selector functionality

- Verify Professional mode loads by default on first visit
- Test toggle operation via keyboard, mouse, and touch
- Confirm immediate redirect to chosen homepage
- Validate persistence of selection on return visits
- Test graceful fallback when storage is denied/blocked
- Verify selector appears only on Pro/DIY homepages

Website users will access footer information

- Navigate primary footer navigation links
- Access secondary (legal/utility) navigation
- Click social media icons from curated list
- Use optional CTA button
- View copyright information
- Access live chat integration

Admin users will manage footer content

- Configure primary and secondary navigation
- Select social platforms from predefined list only
- Set optional CTA with text and URL
- Update copyright text
- Configure chat keys/ID or script

Technical requirements

- No custom icon uploads (curated list only)
- Live chat loads defer/async
- Must not block initial render
- Single global component per site/locale
- Updates cascade across all pages

QA

- Immediate redirect on selection; no double-redirects; back/forward navigation stable (no loops).
- Visibility: control renders only on PRO/DIY homepages; never on inner pages

A11y

- Keyboard: Tab into group; Left/Right move focus; Space/Enter selects; Tab moves out; no trap
- Announcements: on select, politely announce new state (aria-live); after redirect, focus first heading <h1>

Language Toggle

Dropdown trigger

- Displays current selection (e.g., **USA-EN**).
- Icon: Globe + caret/arrow to indicate expand/collapse.
- Click/hover expands the list of available locales.

Dropdown menu

- List of supported **locale options** (e.g., USA-EN, Canada-EN, Canada-FR).
- Active selection is visually highlighted (checkmark + color).
- Hover state changes background for clarity.

Selection behavior

- Clicking an option:
 - Updates the **locale setting** (country + language).
 - Redirects user to the correct localized site version (e.g., example.com/en-ca/ for Canada English, example.com/fr-ca/ for Canada French).
 - Stores preference in **cookie/local storage** so the site remembers selection on return.

Accessibility

- Implemented as an ARIA role listbox with options for screen readers.
- Keyboard support:
 - **Tab** to focus, **Enter/Space** to expand, **Up/Down arrows** to navigate, **Enter** to select.
- Each option labeled with language and region for clarity (e.g., “Canada French”).
- Check for keyboard and/or screen reader traps

Mobile behavior

- Full-width dropdown
- Touch-friendly hit areas (minimum 44px height).

Example Flow

- Default locale loads (e.g., **USA-EN**).
- User clicks toggle → dropdown expands.
- User selects **Canada-FR** → site reloads in French with Canadian region content.
- Next visit: preference auto-applied from saved setting

CTA Banners

1. Standard image banner

- **Elements supported:**
 - Title (large headline)

- Supporting text (short paragraph or subhead)
 - Background image (full-bleed)
 - 1–3 CTA buttons (e.g., “Learn more,” “Shop now”)
- **Use case:** Highlighting a single product, feature, or message with a strong visual anchor.
- **Example in image:** The man applying caulk → large title, short text, single CTA button.

2. Split banner

- **Elements supported:**
 - Two content “sides”: one with **image**, one with **text + CTAs**
 - Title and supporting text on the content side
 - 1–3 CTA buttons (can differ in style, e.g., primary, secondary, external link)
- **Use case:** Balanced storytelling when you need to pair imagery with more detailed copy or multiple action paths.

Shared functionality across all banner types

- **Title & text:** Required headline + optional supporting copy.
- **Images:** Each banner can support either a **background image** or a **split format with dedicated image/content sections**.
- **CTAs:**
 - Supports **up to 3 buttons**.
 - Buttons can be styled differently (primary, secondary, external link with icon).
- **Responsive behavior:** On mobile, CTAs stack and images shift to vertical orientation.

Accessibility

- Alt text required for images; button labels must be descriptive.
- Heading structure matches page hierarchy; readable order (no duplicate h1’s or skipping order)
- External link cues when applicable

QA

- Check within each devices’ breakpoints (phones, mid sized tablets, 1200px for tablet/desktop breakpoint, make sure it scales at 1920+ resolutions too)

PRO Resources Search

Placement & Purpose

- Appears on the Pro page as a dedicated **search bar** component.
- Designed for **quick access to product-specific resources** (datasheets, guides, videos, warranties, etc.) without requiring users to manually browse.

Core Functionality

1. Search input

- Accepts **keywords, SKUs, or product names**.
- Autocomplete/Typeahead: suggest matching products or resource titles as the user types.
- Supports both exact matches (SKU) and fuzzy matches (product names or related terms).

2. Search submission

- On **Enter** key or clicking the **search icon**, the user is redirected to the **Resources page**.
- Results are automatically **filtered** to match the user's search input.
- If no results are found, show a **"No resources found"** state with suggestions to refine search.

Explore all resources CTA

- A **secondary button/CTA** sits directly under the search bar.
- Clicking this takes the user directly to the **Resources landing page** (unfiltered).
- Purpose: serve users who don't have a specific query but want to browse all available resources.

User Flow

- **Path A (search-driven):**
Pro enters a keyword/SKU → hits search → lands on Resources page pre-filtered with relevant results.
- **Path B (explore-driven):**
Pro clicks "Explore all resources" → lands on the unfiltered Resources landing page.

Mobile Behavior

- Search bar expands full width.
- CTA sits directly under the input, stacked for easy thumb access.
- Keyboard "Search" action also triggers results.

Accessibility

- Search input labeled with aria-label="Search resources by product or SKU".
- CTA button labeled clearly (e.g., **"Explore all resources"**).
- Screen readers announce search results or "no results found."

QA

- Identify any reserved search terms that should have hard-coded results or special functionality.
- Test edge cases: blank submit, long tokens, escape characters, offline/slow network graceful handling.

Product Category Cards

Image area

- Displays product imagery (category-level hero product or lifestyle use image).
- Responsive: scales/crops for mobile vs. desktop without losing product clarity.

Title (required)

- Large, bold text (e.g., *Patch & Repair*).
- Always present to identify the category.

Optional supporting copy

- Short descriptive sentence (e.g., *“Fix holes, dents, and surface damage in walls, ceilings, and other interior surfaces with ease.”*).
- Designed to guide **DIY users** by explaining benefits or ease of use.
- Can be omitted if not relevant.

CTA button

- Label: **“View products”**.
- Always links to the **product category landing page**.
- Styled as a primary CTA (contrast color, arrow icon).

Interaction Behavior

- **Clicking anywhere on the CTA** → navigates to the **category page**.
- **Hover state (desktop)**: CTA button highlights; optional card lift/shadow effect.
- **Mobile**: card stacks vertically with CTA placed under title/text.

Accessibility

- Title rendered as <h3> or <h4> for semantic structure.
- Image must have descriptive alt text (product or category name).
- CTA must have accessible label: *“View [Category] products”*.

Use cases

- Displayed in **category overview pages** (e.g., *Repair Products*).
- Can be repeated in grids (2–4 per row on desktop, 1 per row on mobile).
- Flexible enough for marketing-driven copy (DIY friendly) or technical listings (PRO focus).

DIY Project Carousel

Content items (no limit)

Each slide requires:

- **Tag** (category, e.g., *Kitchen and Bath*)
- **Title** (project name, e.g., *How to Recaulk a Shower*)
- **Text/Description** (short supporting copy describing the project)

- **CTA button** (e.g., *View Project*, linking to full guide or resource page)
- **Optional media** (image or embedded video preview, like YouTube)

Carousel navigation

- **Slider dots/indicator:** shows total number of projects and current position (e.g., 1/4).
- **Left/right arrows:** allow sequential browsing.
- **Swipe support:** on mobile devices, users can swipe horizontally.
- **Looping/continuous scroll:** no limit to items; carousel cycles or scrolls indefinitely.

Responsive behavior

- Desktop: larger video/image thumbnail side by side with text.
- Mobile: stacked layout with image/video on top, text + CTA below.

Accessibility

- Carousel region labeled with `aria-roledescription="carousel"`.
- Each slide announced as “Slide X of Y.”
- Keyboard support for arrows and tabbing to CTAs.
- Tags and titles marked up as headings for structure.

Search Bar (How-To Guides Search)

Search input

- Text field with placeholder: “*Search how-to guides*”.
- Accepts any keyword (e.g., *shower, drywall, caulk*).

Submission

- On **Enter** or clicking the search icon, user is redirected to the **How-To landing page**.
- The page loads with results filtered by their search query.
- If no results match, show a “**No results found**” state with suggestions.

Explore all CTA

- Secondary button below search bar: “**Explore all how-to guides.**”
- Links directly to the **unfiltered How-To landing page**.

Accessibility

- Input has label `aria-label="Search how-to project guides"`.
- Button labeled “**Explore all how-to guides**” for clarity.
- Search submissions announced to screen readers.

Product Card

Image (required)

- Displays the product image (from PIM or media library).
- Scales responsively in grid layouts.

Tag (required)

- Category or subcategory label (e.g., *Windows & Door*).
- Helps users quickly understand product use case.

Title (required)

- Product name (e.g., *Alex Ultra Advanced Latex Sealant*).

Key features (optional, up to 5)

- Shown as bullet points.
- Pulled from **PIM data**.
- If product data is incomplete, some or all feature bullets may be **hidden dynamically** (ensuring the card still looks clean).

CTA (required)

- Always present, e.g., *View Details*.
- Links to the product detail page.

Layout

- Up to **4 product cards per row** on desktop.
- On tablet, typically **2 per row**.
- On mobile, **2 column**

Interaction

- Clicking the image, title, or CTA → navigates to the product detail page.
- Optional hover effect on desktop: image zoom or card elevation.

Accessibility

- Product image requires descriptive alt text.
- Card should be structured so that screen readers announce tag → title → features → CTA in logical order.
- CTA labeled as **“View details”**

CTA Cards

Title (required)

- Prominent heading for the card

Text (required)

- Supporting copy, typically 1–3 sentences, giving context or benefits.

CTAs (optional, up to 2)

- Configurable as **primary** and **secondary** buttons (e.g., *Sign Up / Learn More*).
- Each CTA links to an internal page, external site, or downloadable resource.

Media (configurable)

- **Image** or **video**.
- Display position configurable: **left** or **right** relative to the text/CTA block.
- Responsive behavior ensures media stacks above text on mobile.

Card size

- **Small card**: compact, lighter emphasis, shorter height. Typically used in grids or supporting sections.
- **Large card**: more prominent, full-width or half-width with larger media. Best for hero-level or priority messaging.

Layout & Variations

- **Side-by-side layout** (desktop): Media left/right, content on the opposite side.
- **Stacked layout** (mobile): Media above, followed by title, text, and CTAs.
- Supports **multiple cards in a section** or a single featured card.

Interaction

- Media can be static (image) or interactive (video with play button overlay).
- Buttons styled for clear hierarchy (primary vs. secondary).
- Entire card should not be clickable, only CTAs trigger navigation.

Accessibility

- Media: alt text for images; captions/transcripts required for video.
- Logical heading order for screen readers: title → text → CTAs.
- Buttons must have descriptive labels (e.g., *“Learn more about DAP History”*).

Anchor Links

Link behavior

- An anchor link (`<a href="#section-id">`) scrolls the user to the matching section ID on the same page.
- External anchor links (e.g., `page.html#section-id`) load the page, then scroll to the target section.

Target section

- Defined with a unique id attribute (e.g., `<h2 id="specifications">Specifications</h2>`).
- Each anchor must be unique on the page.

Scrolling behavior

- **Smooth scrolling:** Enabled for better UX (e.g., `CSS scroll-behavior: smooth;`).
- Offset adjustment: If sticky headers are used, scroll position accounts for header height so content isn't hidden.

Visual feedback

- On click, anchor target can be visually highlighted (temporary background, focus ring, or underline).
- Useful for orienting the user after a jump.

Accessibility

- Ensure anchor target is a focusable element (`tabindex="-1"`) so keyboard/screen readers announce it.
- Anchor link text must be descriptive (e.g., *"Jump to Warranty Details"* instead of *"Click here"*).
- Works with keyboard navigation and screen readers.

Mobile behavior

- Smooth scroll works vertically with finger-friendly spacing.
- Sticky headers/navigation must not obscure the scrolled-to section.
- Collapsible sections (e.g., accordions) should auto-expand when navigated to by anchor.

Use cases

- **Table of Contents** → Click "Features" → page scrolls to the Features section.
- **FAQ pages** → Click "Shipping Info" → page scrolls to that answer.

- **Cross-links** → “Learn about installation” → jumps to installation section on the same or another page.

Resources Search and Filter

Search

- **Input:** “Search by keyword or SKU”.
- **When submitted** (Enter or icon click):
 - Runs a relevance query over: **title, SKU, product name, resource type/label**, and **body/metadata**.
 - **Ranking** (desc): exact SKU match → exact title match → token match in title → token match in tags/resource type → token match in description/body.
 - **Stemming & typos:** tolerate minor misspellings (1–2 edits) and plurals.
 - **Filters respected:** search executes within any currently active filters/sort/view.
 - **No results:** show empty state with suggestions (clear filters, try synonyms) and a **Clear all** action.

Result count

- Display “**X results**” (updates live with search, filters, sort).
- On first load (no query), show total resources available.

View toggle

- **Default view: Card.**
- Toggle control: **Card | List**.
 - **Card view:** resource tile with type badge (e.g., TDS, SDS, LEED), title, short descriptor, language badges (EN/ES), and **Download** CTA.
 - **List view:** compact rows with columns (Type, Title, Product/Category, Language, Updated date, Download).
- Persist last chosen view in URL/query string (e.g., view=card|list) and local storage.

Sort

- Control label: **Sort by**.
- Options:
 - **Newest** (default): sort by last updated/created desc.
 - **A–Z:** title ascending.
 - **Z–A:** title descending.
- Sort applies to the current result set and persists via URL param sort=newest|az|za.

Filters

Left rail with two groups; clicking updates results immediately (no “Apply” button).

A) Product Category (single select)

- Options include **All** plus categories (e.g., Caulks & Sealants, Adhesives, Patch & Repair, Spray Foam & Insulation).
- **Single-select radio group**; selecting a new category replaces the previous one.
- URL param: category=<slug>. “All” removes the param.

B) Resource Type (multi-select)

- Checkbox group; user may select **one or many** (e.g., TDS, SDS, NOA, LEED, ICC, Installation Guide, Warranty, Testing Reports, Compliance Certificates, Marketing Collateral).
- URL param: type= supports multiple values (e.g., type=tds&type=sds).
- Show selected items as **filter chips** above results with “Clear all”.

Filter logic

- Result set = Search query $\wedge$ Product Category (if any) $\wedge$ (OR of selected Resource Types).
- All filters, sort, view, page size reflected in the **URL** for shareability and back/forward navigation.

Pagination / Load more

- Initial page shows **6 results**.
- **Load More** button appends the next **6**; keeps previously loaded items on the page.
- Hide the button when all results are loaded.
- Update the “Showing X of Y” counter as items load.

Cards / Rows – common data

- **Type badge** (required).
- **Title** (links to detail or triggers download per asset type).
- **Descriptor/subtitle** (e.g., “Technical Data Sheet – Clear”).
- **Language availability** badges (e.g., EN / ES). If a language is unavailable, hide the badge.
- **Download** CTA: primary action. If multiple languages exist, click opens the matching language file; list view may show separate language links.
- **Updated date** (optional display; required for “Newest” sort logic).

Accessibility & keyboard

- All controls and toggles keyboard accessible; visible focus states.

- Announce updates to results count with aria-live="polite".
- Toggle is a proper button group with aria-pressed states.
- Filters are form controls with associated labels; “Clear all” is a button.
- Cards/rows use semantic headings for titles.

Mobile behavior

- Filters in an off-canvas panel (sticky “Filters” button). Apply/Close updates results instantly.
- View toggle and Sort in a compact toolbar above results.
- Cards stack 1-column; list view remains single column with key metadata.

Performance & UX niceties

- Debounce search input (200–300 ms) before firing requests.
- Lazy-load card thumbnails; prefetch next page on idle.
- Preserve state across navigation (URL is source of truth; also use local storage for last view choice).

Search-term chip — functionality

When it appears

- After a search is executed (Enter or icon click) or when the page loads with ?q= in the URL.
- Hidden when the query is empty.

What it looks like

- A closable pill alongside the other chips, e.g.
Search: recaulk ✕ or SKU: 1060301 ✕
- Truncate long queries at ~30 chars with ellipsis; show full text on tooltip/title.

Behavior

- Clicking the ✕ clears only the search query, keeps all other filters/sort/view, re-runs the search, and removes q from the URL.
- **Clear All** removes **every** chip, including the search chip (does not reset sort/view).
- Editing the search box and submitting updates the existing chip’s text; live-updating only occurs when a new query is executed (not on every keystroke).

Ordering

- Chip order: **Search chip first**, then Product Category (single-select), then Resource Type (multi). Keeps intent most visible.

Accessibility

- Each chip is a button with an accessible label:
aria-label="Clear search 'recaulk'".
- Chip row announced via aria-live="polite" when chips change.
- Keyboard: **Tab** to focus chip, **Enter/Space** to clear.

Mobile

- Chips wrap or horizontally scroll; maintain 44px hit targets.
- Keep **Clear All** visible at end of row.

URL/state

- Persist query in ?q=your+terms. Clearing the chip removes q.
- Restoring state from URL should recreate the chip on load.

Edge cases

- **No results:** still show the search chip so users can quickly clear it.
- **SKU detection:** if the query matches a SKU pattern, prefix label with SKU: (optional, config).
- **i18n:** “Search:” and “Clear All” are localized strings.

Config flag

- Feature can be toggled via setting, e.g. showQueryChip: true|false (default true).

Category Cards

Data & CMS config

- **Category** (required): id, title, optional description, **display order**.
- **Card** (required): title, link/CTA, optional thumbnail, optional type badge (e.g., PDF), optional meta (locale, updated date).
- **Assignment:** Each card is mapped to **exactly one category** (or a primary category) via taxonomy. The page renders cards under their assigned category.
- **Ordering:**
 - Category order: manually set in CMS.
 - Card order within category: manual or A–Z (configurable).

Desktop behavior ($\geq$ tablet/desktop breakpoint)

- Each category renders as a **section** with a heading and a **card grid** beneath.
- Grid supports **1–4 columns** responsive (e.g., 4 on desktop, 2 on tablet).
- Optional **“View all”** link if the category has more than N cards visible by default (N configurable).

Mobile behavior (< breakpoint)

- Each category becomes an **accordion item**:
 - **Header row**: category title as a **button** with + / – indicator.
 - **Panel**: contains the card grid (1 column).
- **Interaction**:
 - Tap header toggles expanded/collapsed.
 - Config: singleOpen: true (default) to close others when one opens; false allows multiple open.
 - Smooth height transition (respect prefers-reduced-motion).
- **State**:
 - Deep links like #category=pdf-catalogs open that panel on load and scroll to it.
 - Last open state can persist in the URL (query/hash) or session storage (optional).

Card behavior (all breakpoints)

- **Clickable CTA/link** (required) goes to the resource or landing page.
- Optional elements auto-hide if missing (e.g., no thumbnail → text-only card).
- Thumbnails lazy-load; keep aspect ratio consistent.
- Whole card is **not** a link, only CTA/title is interactive (accessibility clarity).

Accessibility

- Categories are <section>s with headings (<h2>/<h3>).
- Accordion headers are <button>s with:
 - aria-expanded="true|false"
 - aria-controls="[panel-id]"
- Panels have role="region" and aria-labelledby="[header-id]".
- Keyboard support: **Tab** to header, **Enter/Space** toggles, **Up/Down/Home/End** move between headers (WAI-ARIA accordion pattern).
- Icons have aria-hidden="true"; button text communicates state (“Expand Category Management”, “Collapse Category Management”).

Performance

- **Defer/lazy render** large panels: render cards when a panel first opens (optional) to reduce initial payload.
- Lazy-load images within collapsed panels.

Analytics

- Events: `accordion_open` (category name), `accordion_close`, `category_card_click` (category, card title).

Edge cases

- **Empty category:** hide section/accordion entirely (or show “No items yet” if required).
- **Long category titles:** wrap text; keep 44px min tap target height.
- **i18n:** category titles, button labels (“Expand”, “Collapse”), card CTAs localized.

Quick acceptance criteria

- Desktop shows **open** category sections with card grids.
- Mobile shows **accordion** with **+ / –** toggles; only content of expanded panels is visible.
- Cards display **title** and **CTA** at minimum; optional bits auto-hide.
- Deep link `#category=<slug>` opens that category on load.
- All interactions accessible via keyboard and screen readers.

Article/blog Listing

Search

- **Input:** “Search how-to guides”.
- **Scope:** Query runs **only over the How-To content type** (no products/resources unless a how-to explicitly references them).
- **Indexed fields:** title, tags (e.g., “Kitchen & Bath”), short/long description, steps, materials/tools.
- **Ranking:** exact title match → token match in title → tag match → body/steps/materials.
- **Typos/stemming:** allow 1–2 typos; handle plurals/synonyms (e.g., “recaulk” ≈ “re-caulking”).
- **State:** query persisted in URL `?q=`; clearing the search removes `q`.
- **Empty state:** show helpful suggestions + “Clear all filters”.

Filters

Left rail with live-updating results (no “Apply” button).

A) Product Category — single select

- Control: **radio group** (includes **All**).
- Selecting a new category replaces the previous selection.

- URL param: category=<slug>; “All” removes the param.

B) Project Type — multi select

- Control: **checkboxes** (0..n).
- URL param supports multiples: type=painting-trim&type=kitchen-bath.

Filter logic:

Results = How-To items that satisfy **(category)** AND **(ANY selected project types)** AND **(search query, if present)**.

Chips: Selected filters (and optional search term) appear as removable chips above the grid; **Clear all** removes every chip.

Results & layout

- **Count:** “X results” updates as search/filters change.
- **Cards (default grid):**
 - **Image** (required; lazy-loaded)
 - **Tag** (e.g., “Painting & Trim”, “Kitchen & Bath”)
 - **Title** (links to How-To detail)
 - **CTA** (e.g., “View Project”) — same target as title
- **Behavior:** clicking image/title/CTA opens the How-To detail.
- **Grid:** responsive (desktop 3–4 per row, tablet 2, mobile 1). Consistent card heights with clamped titles/teasers to prevent jumpiness.
- *(Optional)* **Sort** control (default **Newest**; also **A–Z / Z–A**). Persist via sort=newest|az|za.

Pagination

- Use either **Load more** (append results) or numbered pages.
- If **Load more**: update “Showing X of Y” and hide the button when all loaded. Preserve scroll position.

Mobile

- Filters open in an off-canvas sheet (sticky “Filters” button).
- Chips sit beneath the toolbar; horizontal scroll if they overflow.
- Tappable areas ≥44px; keyboard “Search” submits query.

Accessibility

- Search input has aria-label=“Search how-to guides”.
- Announce result count changes with aria-live=“polite”.
- Radios/checkboxes use proper labels; chips are buttons with aria-label=“Clear {filter}”.
- Card titles are headings (<h3>/<h4>); images have meaningful alt.

- Respect prefers-reduced-motion for any transitions.

URL/state & analytics

- **State in URL:** ?q=&category=&type=&sort= so results are shareable/back-button safe.
- **Events:** howto_search, filter_apply (with facet names), chip_clear, card_open (with how-to id), load_more.

Edge cases

- No filters selected + empty query → show all how-tos, newest first.
- No results → show empty state with quick links to top categories/project types.
- Hidden/archived how-tos excluded from index automatically.

Article/blog Detail

Content model (CMS fields)

- **Title** (required)
- **Intro/summary** (optional short paragraph)
- **Tag(s)** (e.g., “Kitchen & Bath”, “Exterior”)
- **Hero media** (optional)
 - Type: **Image** or **Video**
 - Image: asset, alt text, caption (optional)
 - Video: provider (YouTube/Vimeo), ID/URL, **poster image**, captions/subtitles file, transcript (text)
- **Recommended products** (optional collection)
 - Source: manual selection **or** auto (by tag/category) with manual override priority
- **Tools list** (optional, ordered) — each item: label, optional link to PDP/resource
- **Materials list** (optional, ordered) — each item: label, optional link to PDP/resource
- **Body (Rich Text)** (required) — supports headings, images, lists, step blocks, callouts
- **SEO** fields (meta title/description; canonical)
- **i18n:** locale variant mapping (EN/ES, etc.)

Hero media (image or video)

- **Placement:** top of page under H1.
- **Image mode**
 - Responsive, 16:9 (default) with object-fit cover; lazy-loaded.
 - Must include alt text; optional caption below.
- **Video mode**

- Embed with **deferred loading** (click-to-play or IntersectionObserver).
 - Use poster image; do **not** autoplay with sound.
 - Provide **captions**; expose a **transcript** toggle beneath the player.
 - If user blocks third-party cookies, show fallback: poster + “Watch on YouTube” link.
- **A11y**: player is keyboard operable; transcript is in a <details> block or collapsible region.

Recommended Products (collapsible)

- **Section header**: “Recommended Products” with **Expand/Collapse** control on the right.
 - Default: **expanded on desktop, collapsed on mobile** (configurable).
 - Control shows current state: “Collapse ▲” / “Expand ▼”.
- **Content**: horizontal rail or grid of product **cards** (image, tag, title, CTA “View Details”).
 - 4 per row desktop, 2 tablet, 1 mobile; rail can be swipeable on mobile.
- **Behavior**
 - Toggle uses a button with aria-expanded and aria-controls.
 - Persist state per page in sessionStorage (optional).
 - Hide section entirely when the list is empty.
- **A11y**: region labeled aria-labelledby of the section header.
- **Analytics**: recommended_toggle (open/close), recommended_click (product id).

Tools & Materials (optional sections)

- Render as **two panels** side-by-side on desktop, stacked on mobile:
 - **Tools** (bulleted list)
 - **Materials** (bulleted list; items may link to PDPs/resources)
- Items without links display as plain text; linked items get inline anchor styling.
- Optional enhancement: user **checkboxes** to mark items gathered (client-side only).
- **A11y**: each panel is a <section> with heading (<h2>); list items are ; links have descriptive labels.

Rich Text Area (steps & content)

- WYSIWYG supports:
 - **Headings (H2–H4)** for step structure (e.g., “Step 1: Remove Old Glazing”).
 - Ordered and unordered lists, callouts, block quotes.
 - Inline images with captions and alt text.
 - Anchor links (auto-IDs on headings) for **in-page table of contents** (optional).
- **Print friendly**: ensure lists, images, and links render cleanly; hide nonessential UI in print CSS.

View/UX details

- **Back to results** link when navigated from How-To listing (uses referrer or ?return=param).
- **Sticky mini-TOC** (optional): shows current step; highlights as the user scrolls (IntersectionObserver).
- **Performance**: lazy-load below-the-fold images; defer third-party video until user interacts.
- **Error/empty states**: if hero media missing, start page with title + intro; if tools/materials empty, hide those panels.

Accessibility

- Logical heading order from H1 downward.
- Collapsible regions implement WAI-ARIA patterns:
 - Buttons with aria-expanded, panels with role="region" and aria-labelledby.
- Transcript text is reachable and readable by screen readers.
- All images have meaningful alt; decorative images alt="".
- Focus states visible; keyboard navigation covers toggles, links, and video controls.

URL/state & analytics

- Query params preserved when returning to list (e.g., ?q=&category=&type=&sort=).
- Events:
 - howto_video_play (id, position, duration)
 - recommended_toggle / recommended_click
 - tools_link_click / materials_link_click
 - toc_step_view (step id) if TOC enabled
 - print_initiated

SEO (structured data)

Embed **HowTo schema** mapped from fields:

- @type: HowTo, name (Title), description (Intro),
- tool (Tools list), supply (Materials list),
- step array with HowToStep (name, text, image),
- video (if present) as VideoObject (name, description, thumbnailUrl, uploadDate/duration if available, transcript via hasPart or transcript),
- image (when image hero).
- Include **BreadcrumbList**; ensure canonical and language alternates for i18n.

Acceptance criteria

- Page supports **image OR video** hero; both optional; renders cleanly if absent.
- “Recommended Products” **collapsible** with proper ARIA and preserved state.
- **Tools** and **Materials** sections render only when populated; items may link.
- **Rich text** supports headings, lists, images, anchors; print stylesheet works.
- All assets lazy-load; video deferred; page fully keyboard accessible.

- HowTo schema renders valid JSON-LD reflecting tools, supplies, and steps.

Tile Cards

Content model (CMS)

- **Icon (required):** picked from a centralized **SVG icon library** in the CMS (stored once, referenced by slug).
 - Props: name/slug, title (for editors), category (Benefits/Values/Support), default color.
 - Output as inline SVG; color follows currentColor so themes can restyle.
- **Title (required):** short label (≤ 60 chars).
- **Text (optional):** short supporting copy (1–2 sentences).
- **Order:** manual sort within a group.

Display variants

1. Vertical (stacked)

- Icon on top, then title, then optional text.
- Center-aligned by default; left align toggle.

2. Horizontal (list)

- Icon left, content right (title + optional text).
- Great for value/benefit lists.

Variant is selectable per tile group; all tiles in a group share the same layout for visual consistency.

Layout & stacking options

- **Per row options (desktop): 2-up, 3-up, 4-up, 5-up** grids.
 - Defaults: 5-up for short labels (benefits), 3-up for longer copy (values/support).
- **Responsive behavior (default)**
 - $\geq 1200\text{px}$: chosen per-row setting (2/3/4/5).
 - **768–1199px (tablet):** auto reduce by one (e.g., 5-up $\rightarrow$ 3-up; 4-up $\rightarrow$ 2-up).
 - **< 768px (mobile): 1-up** vertical stack.
- **Gutters:** sm / md / lg (config at group level).
- **Equal heights:** tiles equalize within a row; text clamps to 2–3 lines to avoid jumpy rows.

- **Wrap:** overflow tiles wrap to additional rows automatically.

Interaction

- **Non-clickable by default.**
- When **Link** is provided and “Make tile clickable” is enabled:
 - Entire tile becomes a link (title remains the visible anchor).
 - Hover/focus: subtle elevation/underline; maintain 44px min hit target.
 - External links show an external-link indicator (optional).

Accessibility

- Icons are **decorative** by default: `aria-hidden="true"`; informative meaning must be conveyed in the **title/text**.
 - If an icon itself is meaningful, allow an optional **visually hidden label** tied to the tile.
- Titles are headings (`<h3>/<h4>`) for structure.
- Clickable tiles use a single anchor with descriptive text (no empty links).
- Keyboard: full focus ring on the tile link; order follows reading flow.
- Contrast meets **WCAG AA**; min tap target 44×44 px.

Performance

- Inline SVGs (no HTTP round-trips).
- Lazy-load icons only if the group is below the fold (optional `IntersectionObserver`).
- Avoid layout shift: reserve icon box size (e.g., 56–64 px square) across breakpoints.

Authoring rules

- Keep titles concise; move details into page copy if lines wrap beyond 2–3.
- Prefer one sentence in **Text** (or none).
- Reuse icons via library slugs to keep design consistent.

Acceptance criteria

- Tiles support **Icon + Title** (required) and **Text** (optional).
- Icons are sourced from a **CMS-managed library** and style via theme tokens.
- Group can render as **Vertical** or **Horizontal** variant.
- Grid stacks as **1-up mobile**, **2/3-up tablet**, **3/4/5-up desktop** per configuration.
- Optional **link** turns the whole tile into one accessible, keyboard-navigable target.
- Equal row heights, consistent gutters, and no CLS.

FAQs

Content model (CMS)

- **FAQ item** (repeatable):
 - **Question** (required, plain text)
 - **Answer** (required, rich text; images/links allowed)
 - **Category** (optional tag for grouping)
 - **ID/slug** (auto) for deep-links (e.g., #faq-shipping-times)
- **Widget settings** (per instance):
 - **Default state: all closed** (required)
 - **Single open vs multi open:** singleOpen: true|false (default **false**)
 - **Show “Expand all / Collapse all” control:** on/off (default off)

UI/Behavior

- Each question renders as a **button** row; clicking toggles its answer panel.
- **Default:** all panels **closed** on load.
- **Animation:** height/opacity transition ~150–200ms; respect prefers-reduced-motion (no animation).
- **Deep-linking:** if URL hash matches an item’s slug, auto-expand that item and smooth-scroll to it (offset for sticky header).
- **Keyboard support:**
 - **Tab** focuses a question; **Enter/Space** toggles.
 - Optional list navigation: **↑/↓** move between questions, **Home/End** jump to first/last.
- **Expand/Collapse all** (if enabled): toggles visibility of all items in the widget.
- **State persistence (optional):** remember open items per page in sessionStorage.

Accessibility

- Structure follows the WAI-ARIA accordion pattern:
 - Question is a <button> with aria-expanded="true|false" and aria-controls="[panel-id]".
 - Answer panel has role="region", id="[panel-id]", and aria-labelledby="[button-id]".
- Focus stays on the question button when toggled (don’t steal focus).
- Minimum touch target **44×44 px**; clear focus ring.
- Icon chevrons are decorative: aria-hidden="true".

SEO (FAQ schema)

- Render **JSON-LD** FAQPage on the page (or section) containing the widget.
- Include **every visible Q/A pair** as mainEntity: [{ "@type": "Question", "name": "...", "acceptedAnswer": { "@type": "Answer", "text": "..." } }].

- Strip unsafe HTML from text; preserve basic formatting where allowed.
- Keep schema in sync with on-page content (no hidden or mismatched Q/A).

Layout & responsive

- Desktop: list of questions with compact spacing; answers expand inline.
- Mobile: full-width rows; answers stack under each question.
- Optional **category grouping**: headings separate groups; each group behaves as an independent accordion (its own expand/collapse all).

Performance

- Lightweight, no reflow thrash: toggle via CSS classes.
- Defer images/iframes inside answers with lazy-loading.
- Use passive scroll listeners only for deep-link offsets (if needed).

Analytics (optional)

- `faq_open` (question id/title)
- `faq_close`
- `faq_expand_all` / `faq_collapse_all`
- Include page and widget identifiers.

Acceptance criteria (summary)

- All FAQ items load **closed by default**.
- Each item opens/closes independently (or single-open, per setting).
- Fully keyboard accessible with proper ARIA attributes.
- Deep-linking to a specific question expands and scrolls to it.
- JSON-LD **FAQPage** is present and mirrors visible Q/A content.
- Works across breakpoints; 44px tap targets; honors reduced motion.

Product Category Tabbing

UI & behavior

- **Control type**: horizontal **tab/segmented** control.
 - Items: *All Products* (default) + each category.
 - Active item has a **bold state** and **underline bar** (as in screenshot).
- **Single select**: selecting a category **replaces** the previous selection.
- **Action**: updates the **product grid** below with items from the selected category.
- **Counts (optional)**: show name (count); counts update with other active page filters (if any).
- **Overflow handling**:

- If categories exceed the width, enable **horizontal scroll** with fade/gradient edges and optional left/right nudge buttons.
 - On mobile, the control **scrolls** horizontally; optional fallback to a compact **dropdown**.
- **Sticky (optional):** make the filter bar **sticky** at the top of the grid as the user scrolls.

URL/state

- Reflect selection in URL: ?category=<slug>; **All** removes the param.
- Restoring from URL sets the active pill and filters the grid on load.
- Preserve selection across pagination and sorting.

Loading & empty states

- While fetching filtered products, show **skeleton** cards or a lightweight spinner confined to the grid.
- If a category has **0 results**, show an empty state with a **Clear category** action and a link to **All Products**.

Accessibility

- Implement as **WAI-ARIA Tabs** or a labeled **radiogroup**:
 - Tabs pattern: container role="tablist", each item role="tab", aria-selected, and aria-controls pointing to the grid region.
 - Radiogroup pattern: role="radiogroup" with role="radio" items and aria-checked.
- Keyboard:
 - **Left/Right** (or **Up/Down**) moves between items,
 - **Enter/Space** selects,
 - Focus ring clearly visible.
- Touch targets ≥ **44×44 px**.

Performance

- Use **client-side filtering** if all products are preloaded; otherwise call the products API with category=<slug> and **debounce** rapid tab changes (~150 ms).
- Lazy-load images in the grid; prefetch the next page of results on idle.

Analytics

- category_filter_select (category slug/name, position index)
- grid_item_click (product id, active category)
- Include page context (locale, device).

Acceptance criteria (summary)

- Default selection = **All Products**; clicking a category filters the grid.
- Exactly **one** category active at a time.
- Selection is reflected in and restored from the **URL**.
- Works with overflow (scrollable on mobile/desktop).
- Fully keyboard accessible with proper ARIA; 44px tap targets.
- Graceful loading and clear empty state.

Product Search and Filter

Controls (left rail)

- **Facet groups:** Environmental Use, Color, Product Size, Clean-Up Method, Surface Compatibility.
 - Color will vary by product category
- **Inputs: multi-select checkboxes** in every group.
- **Counts:** optional (n) next to each value; update live as filters change.
- **Group actions:** “Clear” (resets only that group), collapsible group headers.
- **Applied chips:** show selected values above the grid with a **X** to remove; include **Clear all**.

Interactions

- **Load when checked:** results update immediately on select/deselect (no Apply button).
- **Result count:** updates live (e.g., “156 results”).
- **Sorting:** separate control (Newest, A–Z, Z–A); does not reset filters.
- **Search box:** filters the same result set; works together with facets (see logic).
- **Disabled/zero-state:** values that yield 0 given current selections are disabled (or shown with 0 and dimmed).
- **Overflow options:** “Show more / Show less” within a facet when >10 values.

Mobile

- Filters open in an **off-canvas drawer** (sticky “Filters” button).
- Checking boxes still updates results **instantly**; closing the drawer just returns focus to the grid.
- Chips appear under the toolbar; horizontal scroll if needed.

Accessibility

- Each group is a <fieldset> with <legend>; checkboxes have labels.
- Chips are buttons with aria-label="Clear Color: White".
- Announce result count changes with aria-live="polite".

- Targets $\geq 44 \times 44$ px; visible focus rings.

Loading & Empty States

- While filtering: show grid **skeletons** (no full-page spinner).
- **No results:** message + quick actions (remove last filter / Clear all) + top facets shortcuts.

Filtering Logic

Let **S** = all products, narrowed step-by-step.

Search (optional)

- If a query is present, first limit **S** to items matching the query across: **SKU (exact match boosted), title, tags, color name, size, materials/compatibility**.
- Basic typo tolerance (1–2 edits); stemming/plurals.

Facet logic

- **Across different facet groups: AND** logic

The product must satisfy *every* group that has at least one value selected.

- **Within the same facet group: OR** logic (union)

Selecting White **and** Clear under **Color** returns items that are **White OR Clear**.

Group specifics (recommended defaults):

- **Environmental Use:** OR within group (Indoor OR Outdoor).
- **Color:** OR within group (multiple swatches okay).
- **Product Size:** OR within group using normalized size buckets (e.g., 5.5 oz, 10.1 oz, 28 oz).
- **Clean-Up Method:** OR within group (Water OR Solvent).
- **Surface Compatibility:** OR within group by default. *(Optionally include an “Match all selected surfaces” advanced toggle to switch this group to AND if your users commonly need a product that works on **all** chosen surfaces.)*

Facet counts

- Counts for each value show the number of results **if that value were added** on top of current selections (i.e., *conjunctive* counting).
- Values with 0 are disabled.

URL & State

- Reflect state in the URL for shareability/back button.
- Restoring from URL rehydrates all selections, chips, and the current page.

Analytics (optional)

- filter_select (facet, value, result_count_after)
- chip_clear (facet, value)
- clear_all
- sort_change
- search_submit (term, results)

Acceptance Criteria (summary)

- Multi-select checkboxes in all groups; results **update instantly** on change.
- AND across groups, OR within a group (with optional AND toggle for Surface Compatibility).
- Result count, disabled zero-values, chips with clear/clear-all, persistent URL state.
- Fully accessible, responsive, and uses lightweight skeleton loading.

PDP Header

Content model (from PIM)

- **Title** (required)
- **Media gallery** (images/video) with variant associations (size/color) + alt text
- **Best for** (optional plain text or tag)
- **Technical documents anchor** (link to #technical-documents)
- **Key features** (optional list; hide if empty or not in PIM)
- **Variant matrix** (required)
 - **Sizes** (e.g., 2.8 fl oz, 5.5 fl oz, 10.1 fl oz)
 - **Colors** available **per size**
 - Variant identifiers (SKU/UPC) and any variant-specific media

Layout (desktop → mobile)

- **Left:** media **carousel** with vertical thumbnails; counter (e.g., “1/9”).
- **Right:** info panel:
 - “**Best for**” (optional)
 - **Technical Documents** button → anchors to #technical-documents
 - **Key Features** (up to 5 bullets; auto-hide missing)
 - **Sizes & Colors** selectors
 - **Where to Buy** CTA (sticky behavior described below)

Media carousel

- Thumbnails click/swipe to change main media.
- Supports images & hosted video (e.g., YouTube) with poster; defer video load until selected.
- **Controls:** arrows, swipe (mobile), keyboard **←/→**, thumbnail focus rings.

- **Zoom:** optional click-to-zoom or modal lightbox.
- **A11y:** each slide has alt text; carousel region aria-roledescription="carousel", announce "Slide X of Y".
- **Perf:** lazy-load offscreen images; preload next/prev on idle.

“Best for” (optional)

- Renders as a small text/label (e.g., “Painting Trim”). Hidden if empty.

Technical documents anchor

- Button “**Technical Documents**” scrolls to #technical-documents with sticky-header offset.
- Keyboard accessible; announce target region with aria-live="polite" or focus the section heading.

Key features (optional)

- Up to **5 bullets** from PIM.
- If none present or flagged incomplete → **hide section** (no empty shell).

Variant selection — Sizes & Colors

UI

- **Sizes:** pill buttons (single select).
- **Colors:** swatch buttons (single select) filtered by chosen size.
- Labels and swatches include text for screen readers (e.g., “Color: White, available”).

Default selection

- If URL includes a variant (?size=10-1-oz&color=white) preselect it.
- Else select the **first available size**, then the **first available color** for that size.

Filtering & availability

- On **size** click:
 - Recompute available **colors** for that size from the variant matrix.
 - **Enable** available colors; **disable** unavailable (dim + no click; tooltip “Not available in 10.1 fl oz”).
- On **color** click:
 - Select the corresponding **variant** (size+color).
 - Update SKU context and media gallery (see below).

Gallery & data updates on variant change

- If variant has specific media, load that set; else fallback to base gallery.
- Update alt text, labels, and any variant badges accordingly.

URL/state

- Push state on change: ?size=<slug>&color=<slug> so links are shareable and back/forward works.

“Where to Buy” CTA (sticky)

- **Desktop:** sticky within the right info column (sticks within viewport as user scrolls that column).
- **Mobile:** sticky bar at bottom with CTA (respect env(safe-area-inset-bottom)).
- Do **not** cover critical UI; avoid overlapping cookie/chat widgets via z-index.
- Click opens the WTB flow for the **currently selected variant**.

Accessibility

- Size & color are **radiogroups**:
 - Container role="radiogroup" with aria-label="Select size" / “Select color”.
 - Each option role="radio", aria-checked, disabled state for unavailable colors.
- Swatches have visible focus and an accessible name (“White”).
- Anchor scroll respects reduced motion; focus the destination heading on jump.
- All controls ≥ **44×44 px**; contrast meets AA.

Performance

- Debounce variant changes by ~100 ms to avoid thrash.
- Lazy-load variant media; prefetch media for hovered/next color on desktop.
- Avoid layout shift: reserve media aspect ratio.

Analytics (events)

- variant_change (size, color, sku)
- tech_docs_anchor_click
- carousel_nav (slide index, media type)
- wtb_click (sku, locale)

Acceptance criteria (summary)

- Optional **Best for, Key features** render only when populated.
- **Technical Documents** button anchors to section with correct offset.
- **Sizes** single-select; **Colors** single-select filtered by selected size; unavailable colors disabled.
- Selecting a variant updates **SKU context** and **gallery**.
- **Where to Buy** is sticky and uses the **current variant**.
- Carousel supports thumbnails, swipe, keyboard, lazy-loading, and alt text.
- URL reflects current variant; back/forward restores state.
- Fully accessible; mobile and desktop behaviors match spec.

Product Details

Content sources & visibility

- Tabs map to PIM fields:
 - **Details:** features/benefits list + description (rich text).
 - **Specifications:** spec table / attributes.
 - **How to Use:** steps, tips, or link blocks.
 - **FAQs:** Q/A pairs.
- **Show a tab only if its PIM field has content.** (Trim whitespace/HTML; at least one item/row required.)
- If **only one** tab has content, **render the content without the tab bar** (no fake tabs).

Defaults & ordering

- Tab order: **Details**, Specifications, How to Use, FAQs.
- **Default active tab = Details.**
 - If Details is absent, default to the **first visible** tab in the order above.

UI/interaction

- Standard horizontal tab bar above content.
- Clicking a tab **swaps the content panel** without page reload.
- Optional sticky behavior: tab bar can stick to the top while scrolling within the PDP section.

URL/deeplinks

- Selecting a tab updates the URL (e.g., ?tab=specs or #specifications).
- Loading a PDP with a tab parameter/hash **opens that tab** and scrolls to the tab bar (offset for sticky header).
- Back/forward browser navigation restores the correct tab.

Accessibility (WAI-ARIA Tabs pattern)

- Container: role="tablist".
- Each tab: role="tab", aria-controls="[panel-id]", aria-selected="true|false", keyboard **Left/Right/Home/End** navigation.
- Panels: role="tabpanel", id="[panel-id]", aria-labelledby="[tab-id]", only the active panel is visible/focusable.
- Focus ring visible; minimum touch target 44×44 px.

Mobile behavior

- Tab bar horizontally scrollable if items overflow (with gradient/fade edges).

- Optionally, transform into an accordion **only if** design calls for it; if used, ensure each section toggles independently and preserves deep links.

Performance

- Content for all tabs can be pre-rendered and toggled via CSS/JS **or** lazy-loaded on first open (recommended for heavy spec tables).
- Avoid layout shift; reserve space for the tab bar.

Print & SEO

- **Print view:** render all panels expanded in tab order.
- Content in tabs is in the DOM for crawlability; no hidden/empty tabs rendered.

Analytics (optional)

- tab_view event with { tab: "details/specs/howto/faqs" }.

Acceptance criteria

- Empty PIM fields **do not produce tabs**.
- Default active tab is **Details** (or first available).
- Tabs are keyboard accessible, update the URL for deep links, and restore on back/forward.
- Single available section renders **without** the tab UI.

Specifications table, mobile sticky SKU

Behavior

- **Desktop/tablet (≥768px):** normal table; no sticky columns.
- **Mobile (<768px):**
 - Table sits inside a horizontal **scroll container**.
 - **SKU column stays fixed (sticky) at the left** while the user scrolls the other columns.
 - Header row may also be sticky at the top (optional but recommended).

UX details

- Show a subtle **right-edge shadow** on the sticky SKU column to indicate more content to the right.
- Add a brief **“Swipe to see more columns →”** helper the first time the table enters the viewport (hide after dismissal).
- Keep cells **nowrap**; truncate with ellipsis where necessary and surface full value on long-press/tooltip.

- Maintain **row zebra striping** across the scrolled area so rows are easy to track.

Accessibility

- Use semantic <table>, <thead>, <tbody>, <th scope="col">, <th scope="row"> (if you use row headers).
- Wrap in a region with role="region" and aria-label="Specifications table. Scroll horizontally to view columns."
- Sticky SKU cell must remain **focusable/visible** when navigating with a keyboard.
- Column headers remain associated to cells (don't replace the table with divs).

Performance/tech notes

- Sticky column requires the table to be in a **scrollable container** (not the body).
- Give sticky cells an **opaque background** and higher **z-index** so content scrolling underneath doesn't show through.
- Reserve predictable widths with <colgroup> or fixed min-widths to reduce layout jank.

Acceptance criteria

- On mobile, the **SKU column remains visible** while horizontally scrolling other columns.
- Header row (if enabled sticky) stays visible when vertically scrolled.
- Sticky column has an **opaque background** and **shadow** to separate it from scrolled cells.
- Table is fully accessible (semantic markup, ARIA label on scroll region).
- No layout shift; horizontal scroll is smooth with touch/keyboard.

Product SDS and TDS Listing

Data model & sourcing

- Source(s): PIM (product → document relations)
- Association level: document may be linked at product level or variant level (size/color).
 - Each document record must include: id, type (TDS, SDS, NOA, LEED, etc.), title, language (e.g., en, es), skuScope (all | specific SKU list), fileUrl, fileSize, fileType, lastUpdated, optional region/market.
- Query rules:

- a. Load all documents where productId = current AND (skuScope = all OR skuScope contains the current variant SKU).
 - b. If variant changes, re-run query or client-filter to show only variant-applicable docs.
- Empty state: if the result set is empty, do not render this component and do not render the “Technical Documents” anchor/button in the PDP header.

Functionality

- Anchor target: the section is addressable at #technical-documents.
 - The PDP header’s “Technical Documents” button is optional and renders only when ≥ 1 document exists; on click, smooth-scroll to #technical-documents with sticky-header offset.
- Grouping & order (recommended):
 - Group by Type (TDS first, then SDS, then other types A–Z).
 - Within each type, group by Language (EN, ES, ...).
 - Within language, sort by lastUpdated DESC, then title A–Z.
- Display (per document row/card):
 - Badge for Type (e.g., TDS, SDS).
 - Title (link to file).
 - Meta: Language tag, file type/size (e.g., PDF • 312 KB), Last updated date.
 - Download CTA/button (downloads to local machine). Inline “EN / ES” quick links when multiple languages exist for the same doc type.

Mobile considerations

- Single-column stacked list.
- Large touch targets ($\geq 44 \times 44$ px) for Download buttons and language chips.
- Long titles wrap to 2–3 lines; meta on the following line.

Performance

- Server-render the list whenever possible.
- Defer file size/HEAD lookups; store size in CMS to avoid runtime calls.

- **Lazy-render hidden accordion bodies on first open (mobile).**

Analytics (respect consent)

- pdp_techdocs_view (sku, count, hasVariantSpecific: true|false).
- pdp_techdoc_download (docId, type, language, fileType, fileSize, productId, sku, variantSize, variantColor).
- pdp_techdocs_filter_change (filter: language|showAll, value).
- pdp_techdocs_anchor_click (fromHeader: true).

QA

1. When ≥ 1 matching document exists, the Technical Documents section renders with correct grouping, order, and meta.
2. When 0 documents exist for the product/variant, the section is hidden and the PDP header anchor button is hidden.
3. All Download links download to local machine and include accurate type, language, size, last updated.
4. Mobile: list stacks; (if enabled) accordions operate with proper ARIA.
5. A11y: links read with type + language; variant/language filter changes announced.
6. No layout shift (CLS) when the section appears/disappears; smooth scroll lands with header offset.

Press Release Listing

Featured article (hero)

- **Content:** image (required), tag, date, title, short excerpt, **Read More** CTA → detail page.
- **Source:** “Featured” flag in CMS; if none set, auto-select the **newest** press release.
- **Behavior:** appears once at top; excluded from the grid below to avoid duplication (configurable).
- **Responsive:** image left/text right on desktop; stacked on mobile.
- **A11y:** image alt required; title is an <h2> linking to detail.

Filters (left rail / mobile drawer)

- **Facet groups:**

- **Topic Type** (e.g., Product Launch, Corporate News, Awards, Events) — **multi-select checkboxes**
- **Product Category** (e.g., Caulks & Sealants, Adhesives, etc.) — **multi-select checkboxes**
- **Year** (e.g., 2025...2019) — **multi-select checkboxes** (or single if you prefer; default multi)
- **Counts:** optional (n) next to values; update live.
- **Group “Clear”** per facet; **Clear all** above results.
- **Mobile:** filters open in a slide-in panel; selections apply instantly.

Filter logic (multi-select)

- **Across different facet groups: AND**
*Result must match at least one value in **every** group that has selections.*
- **Within the same group: OR**
*Selecting “Product Launch” **and** “Awards” returns items tagged with **either**.*
- **Result** = (TopicType OR...) **AND** (ProductCategory OR...) **AND** (Year OR...)
- Values that would yield **0** results given current selections are disabled/dimmed.

3) Results grid

- **Card content:** **Tag** (badge), **Date** (optional), **Title**, optional excerpt, and **Read More** CTA → press release detail.
- **Layout:** 3-up desktop, 2-up tablet, 1-up mobile. Consistent card heights; images optional on cards (if available).
- **Result count:** “X results” updates live.
- **Sort (optional):** Newest (default) / Oldest / A–Z. Persists via URL.

4) Pagination

- **Load more** appends 9–12 items per click (configurable) and updates “Showing X of Y”. Hide when all loaded.

5) State, URLs, analytics

- **URL params** persist state for share/shareable back/forward:
?topics=product-launch,awards&cats=adhesives,patch-repair&years=2024,2025&sort=newest
- **Chips:** show active filters as removable pills above the grid; **Clear all** available.
- **Events:** filter_select, chip_clear, clear_all, card_open (id), load_more.

Accessibility & performance

- Facets are <fieldset>/<legend> with labeled checkboxes; chips are buttons with aria-label.

- Announce result count with aria-live="polite".
- Images lazy-load; skeleton cards during updates; no full-page spinners.

Acceptance criteria (summary)

- One **Featured** hero at top; grid lists remaining items.
- Multi-select **OR within** a facet, **AND across** facets.
- Cards show **tag, title, CTA** (and optional date/excerpt); CTA links to detail.
- Live result count, chips, load-more, URL-back/forward safe.
- Fully responsive and accessible.

Press Release Detail

Content model (CMS fields)

- **Tag** (required): e.g., *Product, Corporate News, Sustainability*.
- **Title** (required).
- **Dek / Subhead** (optional): short one-line summary shown in header.
- **Hero image** (optional): used for OG/social; alt text required.
- **Body (Rich Text)** (required): headings, paragraphs, lists, images, quotes, inline links.
- **Publish date** (optional but recommended).
- **Related links / products mentioned** (optional collection).
- **SEO**: meta title/description, canonical, OG/Twitter image overrides.

Layout & header

- **Header block** (top of page):
 - Tag badge → plain text (non-clickable) or link to filtered press list (configurable).
 - Title as <h1>.
 - Dek (if present) under title.
 - (Optional) publish date + read time.
- **Body**: rich text renders below header; supports in-line images (with captions), callouts, and anchor links.
- **Print styles**: hide share UI; ensure links show URLs.

Share component

- **Channels** (configurable; default): LinkedIn, X (Twitter), Facebook, Email, **Copy link**.
- **Placement:**
 - Desktop: right rail or under header; can be sticky within the viewport.
 - Mobile: compact row beneath header; not sticky.
- **Behavior:**
 - Opens a centered popup window (UTM optional) or native share sheet (navigator.share) when available.
 - **Copy link** writes canonical URL to clipboard and shows a brief confirmation toast.
- **Share URLs** (examples):
 - LinkedIn: `https://www.linkedin.com/sharing/share-offsite/?url={url}`
 - X: `https://twitter.com/intent/tweet?url={url}&text={title}`
 - Facebook: `https://www.facebook.com/sharer/sharer.php?u={url}`
 - Email: `mailto:?subject={title}&body={title}%0A%0A{url}`
- **Security:** external shares open with `rel="noopener noreferrer"`.
- **Accessibility:**
 - Each icon is a `<button>/<a>` with `aria-label="Share on LinkedIn"`, etc.
 - Keyboard-focus visible; 44×44 px min targets.

Structured data (SEO)

- Render JSON-LD **NewsArticle** (or **PressRelease** if you use a custom type):
 - headline (Title), datePublished, dateModified, description (Dek), image (hero), articleBody (sanitized), author/publisher (org with logo).
- Include Open Graph & Twitter meta: `og:title`, `og:description`, `og:image`, `og:type=article`, `article:published_time`.

URL & navigation

- Canonical URL per article; optional prev/next links to adjacent releases.

- If deep-linked with # anchors present in body, smooth scroll with header offset.

Performance

- Lazy-load inline images below the fold.
- Defer social SVGs; sprite or inline icons with aria-hidden="true".

Analytics (events)

- share_click (channel, article_id)
- copy_link
- outbound_link_click (if body contains external links)

Acceptance criteria

- Header shows **Tag, Title, Dek** (Dek hidden if empty).
- Body renders **rich text** as authored.
- Share buttons work for **LinkedIn/X/Facebook/Email/Copy link**, keyboard accessible, with confirmation on copy.
- OG/Twitter and JSON-LD are present and reflect on-page content.

Latest Press Releases

Data source & query

- **Type:** Press Release (status = *published*), **locale** matches current page.
- **Date filter:**
 - Include only items with **publish_date ≤ now** (exclude future-dated content).
 - Optional rolling window (configurable): **last 24 months** (default).
 - If the window returns <4 items, **render what's available** (no backfill outside window).
- **Sort:** publish_date DESC, then modified DESC, then id.
- **Limit:** 4 items.
- **De-dupe:** by id.
- **Self-exclusion (safe default):** if placed on a press **detail** page, exclude the current article.

Card content

- **Tag, Title** (link to detail), optional **thumbnail** (with alt/fallback), **Read more** CTA.

Layout & responsiveness

- Desktop: **2×2 grid**; Tablet: **2-up × 2 rows**; Mobile: **1-up** carousel or stacked list (configurable).
- Optional header link: **“View all press releases”** → landing page.

Behavior

- Skeleton cards while loading.
- Hide section only if **0** items meet the date filter.

Accessibility

- `<section aria-labelledby="latest-press"> + <h2 id="latest-press">Latest Press Releases</h2>`
- Cards in `<ul>`; CTA label “Read more about {title}”.
- Carousel (if used): keyboard/screen-reader friendly.

SEO

- Optional JSON-LD **ItemList** (positions 1–4) with canonical URLs; images sized to avoid CLS.

Performance & caching

- Server-render and cache response (**TTL 5–15 min**, stale-while-revalidate).
- Lazy-load thumbnails; use responsive srcset.

Analytics

- `latest_press_impression` (ids shown), `latest_press_click` (id, position), `view_all_press_click` (if present).

Acceptance criteria

- Pulls **exactly 4** most recent releases **within the date filter** ($\leq$ now, within rolling window).
- **No manual overrides.**

- Not used on the landing page; optional self-exclusion on detail pages.
- Fully responsive, accessible, and fast; cards link to detail pages.

Logo Cards

Content model (CMS)

- **Organization name** (required)
- **Logo asset** (required; **SVG preferred**, PNG/WebP fallback)
- **Alt text** (required; default = organization name)
- **Order** (manual sort)
- *(No links, no buttons, no CTAs.)*

Display behavior

- Each item renders as a **uniform tile** containing an organization's logo centered within a fixed logo box.
- Logos maintain **original aspect ratio** inside the box (object-fit: contain); no cropping or distortion.
- Optional grayscale/color styling can be applied at the **group level** (config), not per tile.

Layout & stacking

- **Responsive grid** that automatically wraps as more logos are added:
 - **Desktop (≥1200px): 5-up** grid (default) → auto-wrap to additional rows.
 - **Tablet (768–1199px): 3-up** grid.
 - **Mobile (<768px): 2-up** grid (or 1-up if specified by design).
- **Gutter spacing**: small/medium/large (config at group level).
- **Equal heights**: tiles equalize per row; logo box (e.g., 160×80 px) keeps rows tidy.
- If an odd number of logos ends a row, remaining tiles **left-align** (or center—configurable).

Accessibility

- Each tile is a **non-interactive** element (e.g., <figure> or <div>); no anchors.

- **Alt text** exposes the organization name (e.g., “Habitat for Humanity of the Chesapeake”).
- If logos are purely decorative in a specific context, allow a group setting to set alt="" (not typical here).

Performance

- Provide **intrinsic size** (width/height) to prevent CLS.
- **Lazy-load** logos below the fold; use modern formats where possible.
- SVGs inline or served optimally (no layout shift).

Authoring guidance

- Upload logos on **transparent background** with generous padding removed.
- Keep consistent visual weight; avoid ultra-wide or tiny marks—use the logo box to normalize.

Acceptance criteria

- Renders a **grid of logo tiles** with **no CTAs/links**.
- Grid **auto-wraps** as items are added; breakpoints: **5-up desktop, 3-up tablet, 2-up mobile**.
- Logos are **centered, undistorted**, and fit within a consistent box.
- Alt text = organization name; tiles are non-interactive.
- No layout shift; images lazy-load; spacing consistent across rows.

History Timeline

Content model (CMS)

- **Era/Group** (e.g., *Early Years, 1900s, 1980s*): id/slug, title, order, optional intro.
- **Timeline item** (belongs to an Era):
 - **Year** (required; numeric)
 - **Headline** (required)
 - **Body** (rich text; optional)
 - **Media** (optional): 0–2 images (or video) with alt text/caption

- **Anchor id** (auto from year, e.g., #y-1865), **display order**

Page structure

- **Top anchor bar** (pills/tabs): one anchor per **Era**; click → smooth-scroll to that Era section (offset for sticky header).
 - Active state updates as user scrolls (IntersectionObserver).
 - URL hash updates (#era-1900s) for deep linking/back/forward.
- **Timeline section per Era:**
 - Vertical rule down the center.
 - **Alternating layout** on desktop: first item media left/text right, next item flips, etc.
 - **Mobile:** stacks vertically (media above text), vertical rule aligned left or centered.
- **In-page pagination:** at the end of each Era section, show “**Continue exploring: {Next Era} →**”.
 - Click scrolls to the next Era’s anchor; if on last Era, loop to first (configurable) or hide button.

Interaction details

- **Anchor behavior**
 - Smooth scroll (scroll-behavior: smooth) with JS fallback.
 - Sticky header offset handled in JS (or CSS scroll-margin-top).
 - Deep link to **year** (e.g., /history#y-1906) opens the correct Era, focuses the year item, and flashes a brief highlight.
- **Keyboard & a11y**
 - Top anchor bar is a nav with a labeled list of buttons/links.
- - Focus visible on anchors; Enter/Space activates.
 - The timeline section gets aria-label="{Era title} timeline".
- **Media**

- Images are optional; if only text exists, the item fills the available column.
- Lazy-load below-the-fold; preserve aspect ratio; captions optional.
- Video: click-to-play, no autoplay with sound; poster required.

Responsive layout

- **Desktop ($\geq 1024\text{px}$):** two columns around a center line; items alternate left/right.
- **Tablet (768–1023px):** may still alternate with narrower columns.
- **Mobile ($< 768\text{px}$):** single column; center line or left rail; generous spacing for readability.

Performance

- Lazy-load media; defer video embeds until interacted/visible.
- Use content-visibility: auto for long timelines to reduce layout cost.
- Preload first image of the **next Era** when the “Continue exploring” button enters viewport.

State & URL

- URL reflects current **Era** hash; deep links to **year** are supported.
- Back/forward restores scroll to the correct Era/year.

Analytics (optional)

- era_tab_click (era slug, position)
- continue_exploring_click (from era → to era)
- year_view (year id on first visibility)

Acceptance criteria

- Alternating image/text items on desktop; stacked on mobile.
- Top anchor bar jumps to **Era** sections; active state updates on scroll.
- Each **year** has an anchor; deep linking highlights the target item.
- “Continue exploring” jumps to the **next Era** (or hides on last, per config).
- Fully accessible (semantic structure, focus states, keyboard support).
- Media optional; layout stays clean if missing.

- Smooth, performant scrolling with lazy media and no layout shift.

Testimonials

Data model (CMS)

Carousel

- id, variant (auto | manual), autoAdvanceMs (default 6000; min 5000), loop (bool), showCounter (bool), showDots (bool), theme (light/dark text), defaultBackground (image or solid color token), overlay (on/off, strength 0–100).
- slides[] (ordered list)

Slide

- quote (required, rich text plain – allow italics/line breaks)
- author (required, text)
- role (optional, text)
- background.type = image | solid
 - If image: asset + alt text (if the image is informative); focal point; altUsage (decorative|informative)
 - If solid: design token (e.g., --brand-gray-900)
- Optional textAlignment (center|left|right), textMaxWidth (px or token)

Background resolution guidance: supply 16:9 images at **1920×1080** (desktop) and **1200×675** (mobile); provide srcset.

Functionality

- **Unlimited slides.** If slides.length === 1, **hide** arrows/dots and do not auto-init slider.
- **Navigation controls:** Prev/Next arrows, optional dots, optional “1 / N” counter.
- **Auto-advance (optional):**
 - Enabled via variant=auto.
 - **Pause on hover, pause on focus, and pause when offscreen** (IntersectionObserver).
 - Provide a **Play/Pause** control when auto is enabled.
- **Background behavior:**
 - Slide uses its own background if provided; else falls back to carousel defaultBackground.
 - For images, apply a configurable **overlay** (gradient or solid) to guarantee legibility.

- **Text block:**
 - Quote in `<blockquote>`; author `<cite>`; role follows (span).
 - Clamp extremely long quotes to 8–12 lines (configurable) with “Read more” optional (disabled by default).
- **State & focus:**
 - Slide changes **must not steal focus** unless the user triggers navigation.
 - Keep internal tab order (controls → caption text).

Mobile considerations

- **Swipe/drag** navigation.
- Controls sized to **≥44×44 px** with generous spacing away from system gesture areas; use `env(safe-area-inset-*)`.
- Text container max width (e.g., 28–34ch) and increased overlay strength on small screens.
- Reduce motion: when prefers-reduced-motion is set, **disable auto-advance** and soften transitions (fade ≤150ms).

Accessibility (WCAG 2.2 AA)

- Wrapper: `role="region"` with `aria-label="Testimonials"`.
- Carousel container: `aria-roledescription="carousel"`.
- Slides:
 - Each slide container `role="group"` with `aria-label="Slide X of N"`.
 - If background image is **decorative**, render as CSS background (no alt). If **informative**, render `<img alt="...">` in DOM (hidden from layout if needed) and associate with the quote.
- Controls:
 - Prev/Next are `<button>`s with `aria-label="Previous testimonial" / "Next testimonial"`.
 - Dots are buttons with `aria-label="Go to slide X"` and `aria-current="true"` for the active slide.
 - Provide a **Play/Pause** button when auto-advance is on; label toggles (“Pause carousel”/“Play carousel”).
- Keyboard:
 - **Tab** moves to controls; **Enter/Space** activates.
 - **Left/Right** arrows navigate when on the carousel (optional).
- Announcements:

- Announce slide changes **only when user-initiated**, via a visually hidden live region (aria-live="polite"). Do **not** announce on timed auto-advance.
- Contrast:
 - Text+overlay over backgrounds must meet **AA** (4.5:1 body, 3:1 large text). Enforce via overlay strength tokens.

Performance

- **Lazy-load** non-initial slides' images using loading="lazy"; prefetch **next/prev** on idle.
- Reserve aspect ratio to **avoid CLS** (e.g., set container to 16:9 or designed ratio).
- Defer carousel JS until component is near viewport (IO).
- Use GPU-friendly transforms for transitions; cap to 60fps.

Analytics

- testimonial_impression (carouselId, slideId, position) – fire once per slide per page view when slide first becomes visible.
- testimonial_nav (method: 'next'|'prev'|'dot', fromIndex, toIndex).
- testimonial_autoplay_toggle (state: 'play'|'pause').
- Attach page context {page, locale, device} and consent gating per OneTrust.

Error & edge cases

- **Missing background:** fall back to solid neutral color token + overlay.
- **Missing role:** display author only (no placeholder).
- **Super long names/roles:** soft wrap; ellipsis if needed; never overlap controls.
- **No JS:** show first slide statically (progressive enhancement).
- **Print:** show **all slides stacked** with their backgrounds hidden (or shown as small thumbnails) for readability.

Global Search Results

A) Search bar + typeahead (every page)

- **Input:** single global field.
- **Debounce:** 200–300ms.
- **Typeahead panel:** grouped suggestions with headings (e.g., **Products**, **Resources**).

- Up to 5–7 items per group; bold the matched terms.
- **Keyboard:** ↑/↓ to navigate, **Enter** selects, **Esc** closes.
- **A11y:** panel is a role="listbox"; items role="option", aria-activedescendant updates; announce count via aria-live="polite".
- **Submit behavior:** pressing **Enter** or clicking a suggestion routes to the **Search Results page** with ?q=<term> and opens the **Products** tab by default.

Relevance basics

- Query across normalized indices with: typo-tolerance (1–2), stemming, synonyms.
- **Boost order:** exact SKU > exact title match > title token match > tags > body.

B) Search Results page

Tabs (scope switcher)

- Tabs across the top; defaults to **Products**. Example set:
 - **Products** (default)
 - **TDS/SDS & Documents**
 - **How-To Guides**
 - **Articles** (news/blog/press if included)
- Each tab shows a **result count** badge (e.g., Products (156)). Counts update as filters change.
- Switching tabs **preserves the search query** but **loads tab-specific filters** (see below).
- **URL params:** ?q=...&tab=products (tab change updates URL; back/forward restores state).
- **A11y:** WAI-ARIA Tabs pattern (role="tablist", role="tab", role="tabpanel").

Shared behaviors (all tabs)

- **Result count** at top (e.g., “156 results”).
- **Sort** (per tab defaults—see below).
- **Chips** for active filters with ✕ to clear; **Clear all** resets filters for the current tab (but not the query).
- **Pagination:** “Load more” or numbered pages; preserve scroll position.
- **Empty state:** guidance to adjust filters or view another tab.

Tab-specific views, filters, and sort

Products (default tab)

- **View:** product **cards grid** (image, tag, title, 0–3 bullets, CTA).
- **Filters (multi-select checkboxes unless noted):**
 - Environmental Use (Indoor/Outdoor)
 - Color
 - Product Size
 - Clean-Up Method
 - Surface Compatibility
- **Logic: AND across groups / OR within a group.**
(Example: *Color = White OR Clear*) AND (*Clean-Up = Water OR Solvent*).
- **Sort: Newest** (default), **A–Z, Z–A**.
- **State in URL:** tab=products&color=white,clear&size=10.1oz&cleanup=water.

TDS/SDS & Documents

- **View:** document cards/list (type badge, title, languages, Download).
- **Filters:**
 - Resource Type (TDS, SDS, NOA, LEED, ICC, Warranty, etc.) — **multi**
 - Product Category — **single select**
 - **Logic:** AND across groups / OR within.

How-To Guides

- **View:** how-to cards (image, tag, title, CTA).
- **Filters:**
 - Product Category — **single select**
 - Project Type — **multi**
 - **Logic:** AND across groups / OR within.

Articles (news/blog/press)

- **View:** article cards (tag, date, title, excerpt, CTA).
- **Filters:**
 - Topic/Tag — **multi**
 - Year — **multi**
 - Product Category — **multi** (if applicable)

Logic: AND across groups / OR within.

Dynamic filters: The **left rail re-renders** when the tab changes to show only the facets for that tab. Previous tab's filters are **not carried over** (state is stored per tab but cleared from UI when switching).

Facet counts & disabled states

- Show counts that reflect **conjunctive** availability (i.e., “what you’d get if you add this filter to the current state”).
- Values resolving to 0 are **disabled/dimmed**.

Performance

- Debounce facet changes (150ms); show grid **skeletons** while updating.
- Lazy-load images; prefetch next page on idle.
- Server-side render the first page for SEO; hydrate filters client-side.

Accessibility

- Filters are <fieldset>/<legend> with labeled checkboxes/radios.
- Chips are buttons with aria-label="Clear Color: White".
- Announce result count changes via aria-live="polite".
- All interactive targets $\geq 44 \times 44$ px; visible focus states.

Analytics

- global_search_submit (term, source=header/footer),
- tab_switch (from, to),
- filter_select / chip_clear / clear_all,
- result_click (tab, item id),
- load_more.

Acceptance criteria (summary)

- Typing shows grouped **typeahead**; Enter lands on **Products** tab with ?q=.
- Results page has tabs with **counts; filters change per tab**.
- Products tab uses **AND across / OR within** facet logic; other tabs mirror this with their own facets.
- URL reflects q, tab, and each tab’s filters/sort; back/forward restores state.
- Fully responsive, accessible, performant (skeletons, lazy images).

Forms

Content model (CMS)

- formId, title, introText (optional), successMessage (rich text), successRedirectUrl (optional), submitLabel (default “Submit”), privacyNotice (rich text), locale.
- fields[] (ordered list)
- notifications (to/from/subject templates)
- integrations (CRM/ESP endpoints + field mappings)
- validationMode (client+server, serverOnly)

- captcha (on/off, provider)
- tracking (UTM capture, page source, referrer)

Field (per item in fields[])

- id (slug), label, type (text, email, tel, textarea, select, radio, checkbox, checkbox_group, date, file, country, state, postal, address1, address2, hidden)
- placeholder (optional), helpText (optional), required (bool), defaultValue
- options[] (for select/radio/checkbox_group; label, value, default)
- validation (regex, min/max length, allowed file types/sizes, numeric, email, phone, postal)
- conditionalVisibility (rules like: *show when* phoneType **is** “Mobile”)
- width (full, 1/2, 1/3) for grid layout
- mapTo (external key for CRM/ESP, e.g., hubspot.properties.phone)
- ariaDescription (optional SR-only text)
- prefillKey (querystring/localStorage key to prefill)
- mask (e.g., phone (###) ###-####)

Example fields from your UI: firstName*, lastName*, email*, phone*, phoneType (radio: Home/Work/Mobile), address1*, address2, city*, state* (select), postal*, consent* (checkbox with linked terms/privacy).

UI behavior

- **Required indicator:** asterisk next to label; legend “* Required”.
- **Real-time validation:** on blur and on submit; errors inline beneath fields.
- **Phone input:** numeric keypad on mobile; mask + E.164 normalization server-side.
- **State/ZIP pairing:** State is a dropdown (US list); ZIP validates 5 or 9 digits. (If internationalized, swap to Country → dynamic State/Province & postal patterns.)
- **Consent checkbox:** must be checked to enable submit; shows links to **Terms** and **Privacy**.
- **Submit button:** disabled while submitting; shows spinner/state.
- **Success:** inline confirmation (from CMS successMessage) or redirect (if successRedirectUrl set).
- **Failure:** keep user input, display non-field error, allow retry.

Accessibility

- Native **labels** bound with for/id; error text linked via aria-describedby.
- **Fieldsets/legends** for radio groups (e.g., Phone Type).
- Clear **focus states**; keyboard-only navigation supported.
- Inputs meet **44×44 px** tap targets on mobile.
- Announce **submission success/failure** via an aria-live="polite" region.

Validation rules (recommended defaults)

- **First/Last name:** 1–100 chars; letters, spaces, punctuation.
- **Email:** RFC-compliant pattern; MX check server-side (optional).
- **Phone:** 10–15 digits after stripping; country code optional; store normalized.
- **Address:** non-empty for required; optional **Places autocomplete** (feature flag).
- **ZIP/Postal:** US `^\d{5}(-\d{4})?$` (or per-country patterns if intl).
- **File upload (if enabled):** size $\leq$ 10MB; types (pdf, jpg, png, docx); virus scan server-side.
- **Consent:** required boolean.

Always repeat validation **server-side**; never trust client only.

Security & spam protection

- **CSRF** token.
- **Bot defense:** reCAPTCHA v3/hCaptcha (configurable) **and** a hidden honeypot field; rate-limit by IP.
- **Sanitization:** strip HTML from text inputs; escape output to prevent XSS.
- **Audit fields:** timestamp, IP (hashed if needed), user agent, consent version.

Data handling & integrations

- **Primary storage:** save submission in CMS DB (or form service) with immutable record.
- **CRM/ESP mapping:** send JSON payload to configured endpoints (e.g., Salesforce/HubSpot/Klaviyo); retry w/ backoff on failure; log status per destination.
- **Emails:**
 - **Admin notification:** to configured list with submission summary.
 - **User confirmation (optional):** if email provided and consented; supports double opt-in.
- **UTM auto-capture:** utm_source/medium/campaign/content/term, referrer, landing URL, and current page URL.

Internationalization

- Labels, placeholders, help text, error messages, consent copy are **localized** per form locale.
- Phone and postal validation adapt to selected **country** (if the field is present).
- Date format localized.

Performance

- Load form schema as a single JSON (SSR if possible).

- Defer nonessential scripts; only load CAPTCHA when the form is in view.
- Prevent **CLS** by reserving field heights; show skeleton for long schemas if needed.

Analytics

- form_view (formId)
- form_interact (fieldId)
- form_submit_attempt / form_submit_success / form_submit_error (with error codes)
- consent_checked (true/false)
- Include UTM and page context; avoid sending PII to analytics where prohibited.

Acceptance criteria

- All fields (labels, order, required, options, validation, conditional logic) are **configurable in CMS**—no code deploy needed for changes.
- Client + server validation with clear, inline error messaging.
- Consent must be required to submit; terms/privacy links open in new tab.
- Successful submission stores record, sends configured notifications, and shows CMS-driven success state (or redirect).
- Fully accessible, responsive, and secure (CSRF + CAPTCHA + honeypot + sanitization).
- Integrations receive mapped fields; failures are retried and logged without blocking user success message.

Cookie Banner

- Shows a sitewide banner the **first time** a user visits (or when consent expires).
- Provides **Accept All Cookies** and **Manage Preferences**.
- **Manage Preferences** opens the **OneTrust Preference Center modal**.
- Hides once the user accepts or saves preferences and **persists** the choice via OneTrust cookies.

Banner UI & behavior

- **When to show:** if OneTrust hasn't set either OptanonAlertBoxClosed or OptanonConsent.
- **Buttons:**
 - **Accept All Cookies** → grants consent to all non-essential categories.
 - Implementation (either):
 - Add OneTrust class: `<button class="ot-sdk-show-settings ot-sdk-button" data-ot-action="accept">Accept All Cookies</button>`
 - Or call API: `OneTrust.AcceptAll();`

- **Manage Preferences** → opens OneTrust modal:
 - `OneTrust.ToggleInfoDisplay();` (or `<button class="ot-sdk-show-settings">Manage Preferences</button>`)
- **After action:** hide the banner; OneTrust sets consent cookies and fires callbacks.

Regional & legal notes

- **GDPR/EEA/UK/BR:** show banner; block non-essential cookies until consent.
- **US state privacy (CPRA, etc.):** enable OneTrust’s regional framework; include **“Do Not Sell or Share My Personal Information”** link that opens the Preference Center to the relevant tab:
`OneTrust.ToggleInfoDisplay();`
- **Locales:** OneTrust can auto-select language; you can also set via `OneTrust.SetConsentLanguage('en-us');`

Accessibility

- Banner:
 - Landmarks: `<section role="dialog" aria-label="Cookie consent">`
 - Keyboard focus moves to banner when shown; **Esc** closes only if a clear “Reject/Manage” path exists.
 - Buttons ≥ 44×44 px; visible focus ring; labels readable (AA contrast).
- Modal: OneTrust’s modal handles **focus trap** and ARIA; ensure your theme colors maintain contrast.

Persistence & lifecycle

- **Expiry** managed by OneTrust (configure duration in the admin).
- On expiry or policy change (version bump), banner reappears.
- Consent is **per domain** (and optionally subdomain) based on your OneTrust settings.

Performance

- Load OneTrust stub early; it defers heavy work until needed.
- Avoid layout shift: reserve the banner’s height (e.g., fixed bottom bar).
- Defer third-party vendors until allowed (auto-blocking or manual gating).

QA checklist

- First visit: banner appears; non-essential scripts **do not run**.
- **Accept All:** banner hides; analytics/functional/ads initialize accordingly.
- **Manage Preferences:** preference center opens; saving updates running vendors (revocation stops vendors and deletes cookies where configured).
- Subsequent page loads: banner does not show; preferences persist.

- Regional behavior matches geolocation rules (EEA vs US, etc.).
- Accessibility: full keyboard flow; screen readers announce.