

WCAG 2.0 A and AA Requirements

Name of Product	Engineering Village
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Document Description	This document rates Engineering Village according to the W3C WCAG 2.0 A and AA requirements.
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Testing Tools and Methods	Hands-on keyboard operation Firebug/Code inspection Firefox Web Developer Toolbar (removing style sheets) JAWS 18 on Mozilla Firefox 63 and MS IE 11 on Windows 10 NVDA screen reader v2018.2.1 Wave Extension Color Contrast Analyzer W3C WAI Pages Elsevier Accessibility Checklist: http://romeo.elsevier.com/accessibility_checklist/
Document Sections	The review document below includes all WCAG 2 A and AA checkpoints and is organized into 6 logical sections: <ul style="list-style-type: none">• Visuals• Keyboard• Headings and Structure• Labeling• Multimedia• Usability
Pages Covered	Header, Footer, Quick Search, Search Results, Record Page, Search History, Alerts, Selected Records, Thesaurus Search, Engineering Research Profile, Compendex Overview, Inspec Analytics, Inspec Results, Inspec Graphs.
Note from W3C on Conformance	https://www.w3.org/TR/UNDERSTANDING-WCAG20/conformance.html “If there is no content to which a success criterion applies, the success criterion is satisfied.”
Notes/Terminology	“AT” stands for Assistive Technology such as screen readers, voice input, etc.

WCAG 2.0 Success Criterion	Level	Evaluation
1.1.1: Non-text Content	A	Partially supports
1.2.1: Audio-only and Video-only (Prerecorded)	A	Supports (N/A)
1.2.2: Captions (Prerecorded)	A	Supports (N/A)
1.2.3: Audio Description or Full Text Alternative	A	Supports (N/A)
1.2.4: Captions (Live)	AA	Supports (N/A)
1.2.5: Audio Description	AA	Supports (N/A)
1.3.1: Info and Relationships	A	Partially supports
1.3.2: Meaningful Sequence	A	Partially supports
1.3.3: Sensory Characteristics	A	Supports
1.4.1: Use of Color	A	Supports
1.4.2: Audio Control	A	Supports (N/A)
1.4.3: Contrast (Minimum)	AA	Partially supports
1.4.4: Resize text	AA	Supports
1.4.5: Images of Text	AA	Partially supports
2.1.1: Keyboard	A	Partially supports
2.1.2: No Keyboard Trap	A	Supports
2.2.1: Timing Adjustable	A	Supports
2.2.2: Pause, Stop, Hide	A	Supports (N/A)
2.3.1: Three Flashes or Below Threshold	A	Supports (N/A)
2.4.1: Bypass Blocks	A	Supports
2.4.2: Page Titled	A	Supports
2.4.3: Focus Order	A	Partially supports
2.4.4: Link Purpose (In Context)	A	Supports
2.4.5: Multiple Ways	AA	Partially supports
2.4.6: Headings and Labels	AA	Supports
2.4.7: Focus Visible	AA	Partially supports
3.1.1: Language of Page	A	Supports
3.1.2: Language of Parts	AA	Supports (N/A)
3.2.1: On Focus	A	Supports
3.2.2: On Input	A	Supports
3.2.3: Consistent Navigation	AA	Supports
3.2.4: Consistent Identification	AA	Supports
3.3.1: Error Identification	A	Supports
3.3.2: Labels or Instructions	A	Partially supports
3.3.3: Error Suggestion	AA	Supports (N/A)
3.3.4: Error Prevention (Legal, Financial, Data)	AA	Supports (N/A)
4.1.1: Parsing	A	Supports
4.1.2: Name, Role, Value	A	Partially supports

WCAG 2.0 Checkpoints

Visuals

WCAG 2.0 Checkpoint	Supporting Features	Remarks
<p>1.1.1: Non-Text Content (A) Provide text alternatives for non-text content (e.g. images)</p>	Partially supports	<p>Most icons and non-text content include text equivalents.</p> <p>Exceptions: Header: Because the Institution SVG has been given role="img", it needs alternative text or removal of the role="img" and an aria-hidden="true".</p> <p>Footer: The "Ei" logo does not have meaningful alt text.</p> <p>Quick Search: The Inspec Analytics and Engineering Research Profile images are decorative and should have alt="".</p> <p>Inspec Analytics: The decorative Inspec graphics should have alt="".</p> <p>Inspec Graphs: All of the graphs and charts used cannot be understood using a screen reader.</p>
<p>1.3.3: Sensory Characteristics (A) Do not rely on sensory characteristics of components such as shape, size, visual location, orientation, or sound</p>	Supports	Content does not rely on sensory characteristics.
<p>1.4.1: Use of Color (A) Color is not used as the only visual means of conveying info</p>	Supports	Color is not used as the only means of conveying information for most content.
<p>1.4.3: Color Contrast (Minimum) (AA) Text has enough contrast with the background (4.5:1 for small text and 3:1 for large text)</p>	Partially supports	<p>Most text has enough contrast with its corresponding background.</p> <p>Exceptions: Search Results: The placeholder text for the "For" and "To" inputs in the By Physical Property filter do not have enough contrast at 2.05:1.</p> <p>Record Page: The blue text on light green background ("Back to results", "View all related documents", "Learn more about Scopus") does not have enough contrast at 4.25:1.</p> <p>Search History: The placeholder text for the combine searches input does not have enough contrast at 2.05:1. The blue text on light green background ("Email", "Print", "Download") does not have enough contrast at 4.25:1.</p> <p>Selected Records: The Sort By custom select text does not have enough contrast at 4.25:1.</p> <p>Engineering Research Profile: All of the blue text on light green</p>

		<p>background (several select elements, Reset filters) does not have enough contrast at 4.25:1.</p> <p>Inspec Analytics: The search placeholder text does not have enough contrast at 2.78:1.</p> <p>Inspec Results: The blue highlighted text does not pass at 4.24:1. The gray highlighted text does not pass at 4.17:1. The gray text used does not have enough contrast on a white background at 4.48:1.</p>
<p>1.4.4: Resize Text (AA) Text can be enlarged up to 200% without loss of functionality.</p>	Supports	Users can resize browser text to 200% without loss of functionality.
<p>1.4.5: Images of Text (AA) Text is used rather than images of text, except where the presentation of text is essential, such as logos</p>	Partially supports	<p>Almost no images of text are used other than for Logos or essential presentation.</p> <p>Exceptions: Search Results: The "Check Local Full-text" image is an image of text. Record Page: The "Check Local Full-text" image is an image of text.</p>
<p>2.3.1: Three Flashes or Below Threshold (A) No more than three flashes in a 1-second period, or the flashes are below the defined thresholds</p>	Supports (N/A)	No flashing content exists.

Keyboard

WCAG 2.0 Checkpoint	Supporting Features	Remarks
<p>1.3.2: Meaningful Sequence (A) The correct reading sequence can be programmatically determined</p>	Partially supports	<p>The correct reading sequence is logical with the DOM order matching the visual order in most areas.</p> <p>Exceptions: Thesaurus Search: All of the search filters (Date, Document Type, etc.) should come before the search button.</p>
<p>2.1.1: Keyboard (A) All functionality is available from a keyboard, except for tasks such as drawing</p>	Partially supports	<p>Most content is keyboard operable.</p> <p>Exceptions: Engineering Research Profile: The "Favorite" star icon cannot be reached with keyboard. The Pie/Bar switch button cannot be reached by keyboard. Compendex Overview: The Publication Year slider cannot be reached by keyboard. Inspec Results: The left-hand navigation options cannot be reached by keyboard. The breadcrumb links cannot be reached by keyboard. Inspec Graphs: The left-hand navigation options cannot be reached by keyboard. The breadcrumb links cannot be reached by keyboard. All of the tooltips that appear on mouse-hover within the graphs cannot be</p>

		shown with keyboard. The 'i' help icons have a tooltip that does not appear on focus. The links such as Subject Classifications, Collaborations, and Top Controlled Terms within the graph data cannot be reached by keyboard. The Various Collaborations and Controlled Terms also cannot be reached by keyboard.
2.1.2: No Keyboard Trap (A) The user can use the keyboard to move through page elements and is not trapped on a particular element	Supports	No keyboard traps exist on any page.
2.4.3: Focus Order (A) Users can tab through the elements of a page in a logical order	Partially supports	Tab order is logical on the site in most areas. Exceptions: Header: Focus should be placed into the navigation spine after activating the hamburger. As the spine dims out the rest of the page, it should restrict focus until it is closed. Engineering Research Profile: The Add to Favorites search should come before the Remove Search button to match the visual order. Compendex Overview: Using the arrow keys in the Subject Areas graph moves focus in illogical ways.
2.4.7: Focus Visible (AA) The page element with the current keyboard focus has a visible focus indicator	Partially supports	Nearly all elements use a custom-styled visible focus. Exceptions: Inspec Analytics: The Search magnifying glass button and the various other search buttons on the page do not have a visible focus.
3.2.1: On Focus (A) When a UI component receives focus, this does not trigger unexpected actions.	Supports	Focusable elements do not cause unexpected actions when receiving focus.
Headers and Structure		
WCAG 2.0 Checkpoint	Supporting Features	Remarks
1.3.1: Information and Relationships (A) Info, structure, and relationships can be programmatically determined	Partially supports	Headings are used on most pages. Some pages make use of more than one h1. Unordered lists are typically used to group related content. Landmarks are used in several places (role of main, navigation, regions with labels, etc.). Exceptions: Quick Search: The Inspec Analytics and Engineering Research Profile text should be headings (h2s). Search Results: The # of Records heading needs to not be given an aria-label, because it replaces the actual record numbers. The "Source" text within each result should not be a heading. Each result should be an individual list item in an unordered list. Each set of filter checkboxes should be an unordered list.

		<p>Record Page: Each set of Journal Articles, Conferences, etc. should be its own unordered list under related documents.</p> <p>Engineering Research Profile: "Institutions & groups" should be an h3. "Search & add" and "Favorites" should be h4s.</p> <p>Compendex Overview: The Compendex various numbers should not be headings.</p> <p>Inspec Analytics: Only one h1 should be used on a page; the number of Organizations, Subject Classifications, and Controlled Terms should be h2s and should include the text with the number in the heading. The hosted iframe must have a meaningful title attribute.</p> <p>Inspec Results: The results headings (Organizations containing..., Controlled Terms containing..., etc.) should be h2s. The hosted iframe must have a meaningful title attribute.</p> <p>Inspec Graphs: The hosted iframe must have a meaningful title attribute. The headings for each data section (Articles per year, Rank & Articles, etc.) should be h2s.</p>
<p>2.4.1: Bypass Blocks (A) Users can bypass repeated blocks of content.</p>	Supports	Headings and landmarks exist, allowing screen reader users to skip repetitive content. There is also a visible "skip to main content" link at the beginning of the page.
<p>2.4.6: Headings and Labels (AA) Headings and labels are clear and consistent.</p>	Supports	Headings are clear and descriptive.
<p>3.1.1: Language of Page (A) The language of the page is specified</p>	Supports	The language is defined as lang="en-US" on all pages.
<p>3.1.2: Language of Parts (AA) Specify the language of text passages that are in a different language than the default language of the page.</p>	Supports	None of the site-wide UI or functionality uses a different language than the default.
<p>4.1.1: Parsing (A) Use valid, error-free HTML</p>	Supports	HTML and CSS passes concerning these 4 specific criteria: (i) elements have complete start and end tags, (ii) elements are nested according to their specifications (iii) elements do not contain duplicate attributes (iv) any IDs are unique, except where the specifications allow these features.
Labeling		
WCAG 2.0 Checkpoint	Supporting Features	Notes
2.4.2: Page Titled (A)	Supports	The title changes accordingly for each page and is descriptive.

<p>The page has a title describing its topic or purpose</p>		<p>Note: All Inspec pages share the same page title. The page title within the Inspec iframe does change for each page.</p>
<p>2.4.4: Link Purpose (In Context) (A) The purpose of each link can be determined from the link text or surrounding context.</p>	<p>Supports</p>	<p>All links used have an identifiable purpose from the link text or surrounding context.</p>
<p>3.2.4: Consistent Identification (AA) UI components used across the web site are identified consistently on every page.</p>	<p>Supports</p>	<p>UI components are consistent across the site.</p>
<p>3.3.1: Error Identification (A) Input errors are clearly marked and described to the user.</p>	<p>Supports</p>	<p>Errors are given and described well.</p>
<p>3.3.2: Labels and Instructions (A) Items requiring user input are clearly labeled or have clear instructions.</p>	<p>Partially supports</p>	<p>Most input areas have clear labels which are programmatically assigned.</p> <p>Exceptions: Custom Select elements should be using an actual label, instead of using one of the select options as a label.</p> <p>Quick Search: Using the arrow keys alone to switch between search type options does not read anything out to screen readers.</p> <p>Search Results: The "From" and "To" text inputs within the "By Physical Property" filter do not have labels. The labels for the result checkboxes are read out inconsistently. The Location, Format, and Output texts within the download options dialog should be within a <legend>, not a <label>.</p> <p>Record Page: The checkbox next to the abstract title needs to use an aria-label or similar, as a title alone is not sufficient as a label. The Location, Format, and Output texts within the download options dialog should be within a <legend>, not a <label>.</p> <p>Alerts: The Alert Status checkbox toggle does not read out its current status (Saved vs. Alert).</p> <p>Selected Records: The Location, Format, and Output texts within the download options dialog should be within a <legend>, not a <label>.</p> <p>Thesaurus Search: The checkbox labels need to be improved to properly state what the purpose of checking the box is.</p> <p>Inspec Analytics: The search input does not have a label.</p>
<p>3.3.3: Error Suggestion (AA)</p>	<p>Supports</p>	<p>The error text given is sufficient for error suggestions.</p>

When the user makes an input error, give suggestions for valid input.		
<p>4.1.2: Name, Role, Value (A)</p> <p>For all UI components, the name, value, and role can be programmatically determined.</p>	Partially supports	<p>Most UI components do not communicate their state programmatically.</p> <p>Exceptions:</p> <p>Header: Because users tab to the <button> Sign In element, that is what should receive the aria-expanded attribute. The profile dropdown should not have a role="dialog". The Personal Details, Change Password, and Alerts & Saved Searches elements within the profile dropdown should be links. All of the elements within the More dropdown should be links. The 'X' close button in the Sign In popup should have role="button", not role="menu"; it also should not have aria-expanded.</p> <p>Search Results: The View chart button states that it opens in a new window, when it only opens a dialog. The Show/Hide preview elements should be buttons and the aria-expanded attributes are on the wrong elements. The Select All Records arrow needs a more specific name and should be a button element. All of the toolbar options should not have aria-haspopup. The aria-label for the download options should match the title attribute.</p> <p>Record Page: The toolbar elements should not have aria-haspopup. The download button should state "Download record". The aria-label for the download options should match the title attribute. The Search History and Begin New Search elements should be links.</p> <p>Alerts: The "More Details" element should be a button and should not have aria-haspopup.</p> <p>Selected Records: The toolbar elements should not have aria-haspopup. The aria-label for the download options should state that it opens download options.</p> <p>Engineering Research Profile: The Favorite icon should be a button element and needs an accessible name. The Minimize institutions & groups element should be a button and needs a proper accessible name, as a title is not sufficient; additionally, its title should not refer to "refine results". The Add/Remove buttons should specify which institution will be removed from favorites or search. The Remove All buttons should be one button element (not two separate link and button) and the that contains the 'X' should be given aria-hidden="true" so it does not read out to screen readers.</p> <p>Inspec Graphs: The 'i' help icons should announce the tooltip content to screen readers.</p>
Multimedia		
WCAG 2.0 Checkpoint	Supporting Features	Remarks
1.2.1: Audio-only or	Supports (N/A)	No pre-recorded audio-only or video-only content was reviewed.

Video-only (Prerecorded) (A) Provide alternatives for pre-recorded audio-only or video-only content.		
1.2.2: Captions (Prerecorded) (A) Provide captions for pre-recorded audio	Supports (N/A)	There is no pre-recorded audio on the site.
1.2.3: Audio Description or Media Alternative (Prerecorded) (A) Provide alternatives for pre-recorded synchronized audio/video	Supports (N/A)	There is no pre-recorded synchronized audio/video on the site.
1.2.4: Captions (Live) (AA) Provide captions for live audio in synchronized audio/video.	Supports (N/A)	There is no live audio in synchronized audio/video.
1.2.5: Audio Description (Prerecorded) (AA) Provide an audio description of pre-recorded video.	Supports (N/A)	There is no pre-recorded video on the site.
1.4.2: Audio Control (A) Audio can be paused and stopped, or the audio volume can be changed.	Supports (N/A)	There is no audio content on the site.
2.2.2: Pause, Stop, Hide (A) Users can stop, pause, or hide moving, blinking, scrolling, or auto-updating information.	Supports (N/A)	There is no moving, scrolling, or auto-updating information.
Usability		
WCAG 2.0 Checkpoint	Supporting Features	Remarks
2.2.1: Timing Adjustable (A) Users are warned of time limits shorter than 20 hours and time limits can be turned off	Supports	There is a time limit of 8 hours for logged in users and 30 minutes for users not logged in, but a warning pops up and warns the user about the session timeout. An option is given to extend the current session.

or extended		
<p>2.4.5: Multiple Ways (AA) More than one way is available to navigate to other web pages.</p>	Partially supports	<p>Users can reach most pages in the system using the global navigation. Content pages can be reached through the global nav or homepage. Recommend using a Site Map to cover all bases.</p> <p>Exceptions: Users can only reach certain pages through the More menu (Bulletins, Folders). Different search types can only be reached through the Search menu in the Header.</p>
<p>3.2.2: On Input (A) Changing the setting of a checkbox, radio button, or other UI component does not trigger unexpected changes in context.</p>	Supports	User inputs do not cause unexpected actions for most content.
<p>3.2.3: Consistent Navigation (AA) Navigation menus are in the same location and order on every web page.</p>	Supports	Navigation menus are consistently in the same place and in same order.
<p>3.3.4: Error Prevention (Legal, Financial, Data) (AA) For web pages with legal or financial commitments, input can be reviewed and corrected before final submission, and submissions can be reverted.</p>	Supports (N/A)	There are no submissions which require legal or financial commitments.