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# Non Functional Requirements

Websites implemented by Dynamicweb Services

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## 1 SUMMARY

This document describes criteria to the delivered software solution which are not related to what features the solution has and what it can do, but how it does it, how it is operated and how it should behave in various scenarios

## 2 MOBILE FRIENDLYNESS & RESPONSIVENESS

### 2.1 Definitions

| Term       | Description   |
|------------|---|
| Responsive | Means that the content and elements will resize with the browser window to fit dynamically as the window is resized   |
| Adaptive   | Means that the content or element will load differently on different devices. I.e. one navigation if it is a phone and another navigation on a desktop. Resizing a window will not change the navigation. |
| Viewport   | The viewable area on a device. A phone has 2 Viewports – one vertical and one horizontal. On a desktop, you have multiple if the window is resized.   |
| Device     | Phone, tablet or desktop computer.  |

### 2.2 Responsiveness

All pages must be responsive and be viewable in different device sizes – mobile, tablets and desktop. Features must be available in all viewports but can act in different ways to fit the different viewport and navigation possibilities.

### 2.3 Mobile navigation

Navigations must be rendered as adaptive if they do not share markup. It is required to only render the relevant navigation markup related to the current device to avoid excessive markup. Do not use hide/show CSS features on device breakpoints

### 2.4 Validation and measurements

All pages must validate Google mobile friendly tool:

<https://www.google.com/webmasters/tools/mobile-friendly/>

The front page of the website must have a mobile score of at least 75 on Google PageSpeed Insights

<https://developers.google.com/speed/pagespeed/insights/>

### 2.5 Supported device types

The mobile friendliness and principles used for responsive and adaptive behavior must work on modern mobile devices and related browsers, and does not have to work the same way on older and uncommon mobile devices. See Supported browsers and devices section.

## 3 HTML AND CSS VALIDATION

All CSS and html should validate against the used html and CSS versions

### 3.1 HTML and CSS versions

HTML is written in HTML5 standard and CSS in CSS3 standard as specified by W3 consortium and is used as specified in the specification. Browsers can have different implementations and behaviors and the solution can therefore act differently in different browsers. The feature has to be able to do the same things though.

For browsers not supporting HTML5 and CSS3 or not supporting all elements of HTML5 and CSS3, the implementation is made in a way that it falls back gracefully so that the feature might look and behave differently, but will still work.

### 3.2 HTML validation

Markup has to be validated against <https://validator.w3.org> – warnings are accepted and errors are by default not accepted and should be fixed. Some validation errors can be accepted if they are not violating the DOM structure but are of semantic character i.e. invalid “for” attributes on labels etc.

## 4 PERFORMANCE

### 4.1 Definitions

There are different metrics that can be used to measure performance of a website. This section describes these metrics and defines what they mean. 2 metrics have been chosen to describe the expected performance.

#### 4.1.1 Server execution time/Time to first byte (TTFB)

This is the time it takes when a user clicks a link and for the server to receives and execute the request and start sending back the response (the page).

The time spend here is the time the server uses to execute Dynamicweb and generate the page that the user wants to download. This time varies very little no matter how slow the user's internet connection is. This is the performance of the solution and the server.

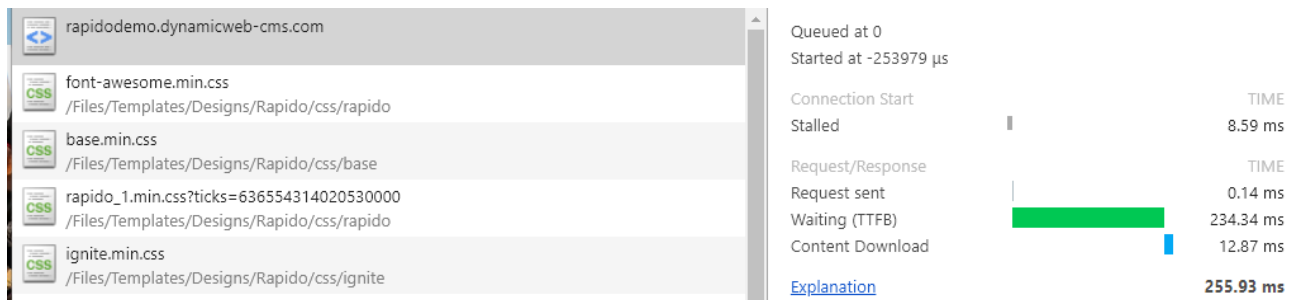


Figure 1: "Waiting (TTFB)" in Chrome developer tools is the measurement metric

#### 4.1.2 Page loaded

This is the time it takes when a user clicks a link and until the page is ready again for the next click. This times includes the TTFB and also includes the rendering of the page and the download of all the needed resources such as images, CSS and Javascript.

The time spend is a combination of the time the server uses to execute (TTFB) and the time it takes to download the resources such as images and render them in the browser. This measurement is depending on 2 different things – the speed of the internet connection and the speed and type of the browser/device.

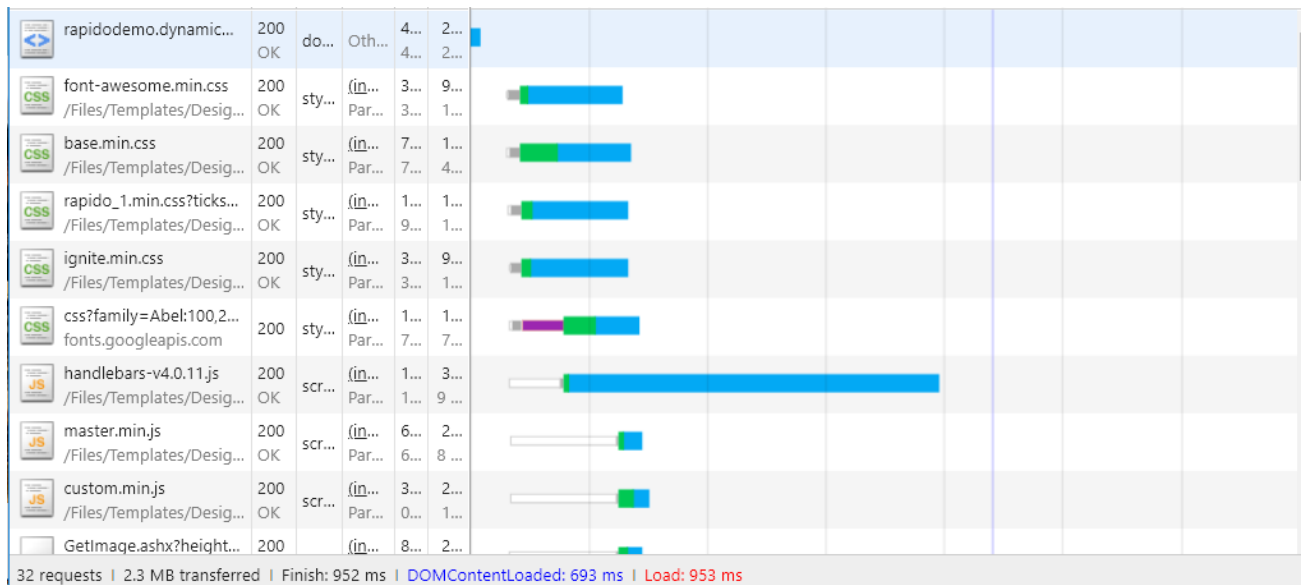


Figure 1: "Load: xxx ms" in Chrome developer tools is the measurement metric

#### 4.1.3 Page types

These are descriptions of the different elements and pages used for testing performance.

| Page type          | Definition   |
|--------------------|--|
| Front page         | The first page on the website with a slider or carousel with 2 images, a list of 4 popular products with images, 4 regular content sections of regular text and images.        |
| Product list       | A list of products with name, price, sku and image. 30 products are listed in total. Also up to 5 filters (facets) with up to 20 options.                                      |
| Product search     | The action of entering one or more search terms to the search input and conducting a search.<br>An alternative action can be to apply one or more filters to the product list. |
| Product page       | Showing the page with details of a product with name, sku, variant information, description, up to 5 images, up to 20 properties and up to 4 related products.                 |
| Add to cart action | Submitting an add-to-cart action and await for the mini cart to be updated with the new quantity and amount.   |

#### 4.2 Response times

These are the required load times. The defined times are based on the page types described above. The result of the performance measurement can be affected if more content is added to the page than specified or if large images are used instead of optimized images etc. The expected times are with optimized data and with content specified as above.

See below chapter for how to measure.

| Page type                     | Measurement | Time        |
|-------------------------------|-------------|-------------|
| Front page                    | TTFB        | 0,5 seconds |
|                               | Page loaded | 1,5 seconds |
| Product list with 30 products | TTFB        | 1,0 seconds |
|                               | Page loaded | 2,0 seconds |
| Product search                | TTFB        | 1,0 seconds |
|                               | Page loaded | 2,0 seconds |
| Product page                  | TTFB        | 1,0 seconds |
|                               | Page loaded | 2,0 seconds |
| Add to cart                   | TTFB        | 1,0 seconds |
|                               | Page loaded | 2,0 seconds |

#### 4.3 Integration

In ecommerce solutions with integration, prices, discounts and carts can be calculated by the ERP system. The time it takes to calculate for the ERP system is depending on the load and configuration of the ERP system and will therefore be disabled when measuring performance.

#### 4.4 External resources

The solution should not be using CDNs for external resources except when all resources are moved to the same CDN.

Exceptions are integrations to external systems like Google Analytics, Google Tagmanager, Facebook, Instagram etc. When measuring performance (page loaded) external resources are not taken into account

#### 4.5 Measurements – how to measure

Chrome and Chromes developer tools are used to measure TTFB and Page Load times

The test is performed on Dynamicweb network where the client and the server is on the same network. If the solution is hosted externally the test should be conducted from a client on the same network as the server.

#### 4.6 Other measurements

The frontpage of the website has to have a score of 80 or above as measured on the Google PageSpeed Insights.

<https://developers.google.com/speed/pagespeed/insights/>

## 5 SCALABILITY

These are the thresholds under which the performance measurements should work. If the load or use cases exceeds the threshold below, performance can be affected.

| Measurement                                     | Threshold |
|---|-----------|
| Number of concurrent users                      | 20        |
| Number of daily visitors                        | 1.000     |
| Number of daily orders                          | 100       |
| Number of email marketing subscribers per email | 10.000    |
| Number of order lines                           | 100       |

## 6 BROWSER AND CLIENT SUPPORT

### 6.1 Supported browsers and devices

| Device type         | Browser                  | Screen                                 |
|---------------------|--------------------------|--|
| PC (Win 10)         | Chrome (latest version)  | Full screen                            |
| PC (Win 10)         | Firefox (latest version) | Full screen                            |
| PC (Win 10)         | Edge (latest version)    | Full screen                            |
| MAC (OSX)           | Safari (latest version)  | Full screen                            |
| iPad Air 2 (iOS)    | Safari (latest version)  | Vertical & Horizontal view/orientation |
| Galaxy S5 (Android) | Chrome (latest version)  | Vertical & Horizontal view/orientation |
| iPhone 6S (iOS)     | Safari (latest version)  | Vertical & Horizontal view/orientation |
| PC (Win 10)         | Chrome (latest version)  | Full screen                            |

### 6.2 Supported mail clients

Emails are based on the Respmail template which is a response HTML email designed to work on all major devices and responsive for smartphones that support media queries.

This template ensures usable rendering in most e-mail clients.

Emails are tested on the devices and mail clients specified below and have to look right and work on these clients. Minor differences in looks are accepted due to the difference in the rendering, but they cannot look broken.

| Device type | Mail client                        |
|-------------|------------------------------------|
| PC (Win 10) | Microsoft Outlook (latest version) |
| PC (Win 10) | Google Gmail                       |
| MAC (OSX)   | Microsoft Outlook (latest version) |

iPhone (iOS)

| Apple Mail

## 7 DESIGN AND ALIGNMENT

The following apply unless the design state otherwise.

- Text is left-aligned.
- Numbers are right-aligned.
- Prices and dates are formatted using the regional settings from the websites settings in such a way that decimal and thousand separator and general price formatting follows the culture of the regional settings, i.e. DKK 56.789,23 or \$99.95 or SEK 1 234,25 etc.
- Organize elements in such way that elements are aligned to the left and/or to the right taking its parent element into consideration.