LAKE COUNTRY
Life. The Okanagan Way.

New Watermain Commissioning Policy 189, 2021

District of Lake Country
10150 Bottom Wood Lake Road
Lake Country, BC V4V 2M1
t: 250-766-5650 f: 250-766-0116
lakecountry.bc.ca

Date

The following was approved by the Chief Administrative Officer (CAO) as an Administrative Policy on April 28, **2021.**

This policy was amended as follows:

Amendment Date	Resolution No.	Summary of Amendment
2021-11-01	N/A	Deleted and replaced section 11

New Watermain Connection Policy 178, 2020 is hereby rescinded.

Purpose

This policy establishes and governs the procedures for flushing, testing, disinfection and connection of newly-constructed watermains to the municipal water distribution system.

Policy

1. GENERAL

1.1. Construction on the municipal water distribution portion of the project, here after described as the "waterworks", shall not commence without prior authorization from the District Engineer.

1.2. Connection to the municipal water distribution system must not be made without written authorization from the District Engineer.

1.3. Construction of the proposed waterworks must meet all standards for the design and construction of water distribution systems contained in the District Subdivision and Development Servicing Bylaw and MMCD Platinum Edition Volume II, as amended from time to time.

This policy does not create any duty at law on the part of the District, its Council, District Engineer, officers, employees or other representatives. All works, services, improvements and all matters required pursuant to the District Subdivision and Development Servicing Bylaw and all other applicable District Bylaws, permits, policies, legislation and regulations are the responsibility of the Owner and Applicant and all persons acting on their behalf. No approval of any kind, certificate, permit, review, inspection, or other act or omission by the District or any of its representatives, including any enforcement, or lack of enforcement of the provisions of the Bylaw shall relieve the Owner and Applicant and all persons acting on their behalf from this duty pursuant to the Bylaw and shall not create any cause of action in favor of any person.

2. NOTIFICATION

The Owner's Engineer shall provide the District Engineer with a proposed construction schedule a minimum one month prior to the start of construction.

2.1. The schedule shall contain the following:

(a) The name of the contractor working on water main construction including contact names and 24-hour emergency phone numbers.
(b) Detailed written procedures for flushing, testing and disinfection including a schematic drawing.
(c) Detailed written procedures for connection to existing watermains documented on the forms provided.
(d) Written notification from the Owner's Engineer to the District Engineer a minimum 48 hours prior to the start of construction of the waterworks portion of the project.
(e) Written notification from the Owner's Engineer to the District Engineer at least one month prior to the proposed connection date in order to schedule connection to the municipal water distribution system. Written authorization to perform the connection to the municipal water distribution system must be provided by the District. District Operations staff must be on site when the connection is made.
(f) Written notification from the Owner's Engineer to the District Engineer a minimum 48 hours prior to the scheduled bacteriological test and tie-ins for District witnessing.

3. OPERATION OF DISTRICT UTILITY

The operation of any utility valves or curb stops must be performed by District Operations staff unless otherwise authorized. District fees apply.

4. FLUSHING AND LEAKAGE TESTING

4.1. General

Flushing, testing and disinfection shall be completed in accordance with Subdivision and Development Servicing Bylaw, MMCD Platinum Edition and applicable American Water Works Association ("AWWA") standards, as amended from time to time.

Testing must be conducted in the presence of the Owner's Engineer.

4.2. Cleaning and Preliminary Flushing

(a) Cleaning and preliminary flushing must be completed in the presence of the Owner's Engineer.
(b) Flushing velocities must be completed in accordance with AWWA C605 and 651.
(c) Flushing velocities shall not be less than 0.91m/s.
(d) Where minimum flushing velocities cannot be achieved methods consistent with the District's **Alternative Watermain Flushing Procedures** document (Appendix F) may be accepted with prior approval from the District Engineer. Other methods must be proposed and accepted by the District Engineer in advance.

4.3. Leakage Testing

(a) Leakage testing must be completed in accordance with AWWA C605.

5. DISINFECTION AND BACTERIOLOGICAL TESTING

5.1. Disinfection must be performed using the continuous feed method using chlorine (as per AWWA C651-14, 4.4). Water shall not be released into a watercourse, storm drain or body of water with a Total Residual Chlorine concentration equal to or greater than 0.1mg/l (including potable water from the District community water system). For water disposal see MMCD 33 11 01, 3.17.

5.2. The Owner's Engineer shall ensure sample locations are representative of the water quality of the entire length of the newly installed main. Whenever possible, sample locations should be at the furthest distance away from the tie-in location.

5.3. Two consecutive samples collected at least 16 hours apart shall be collected from the new watermain and tested for free chlorine and bacteria.

5.4. Bacteriological testing must be witnessed by District staff or representative and all samples must be sealed by the District.

5.5. The Owner's Engineer must ensure the samples are properly preserved and delivered to a certified lab for analysis. If the proposed water works is not in service (with District approval) within seven calendar days of the second bacteriology sampling date, the watermain must be flushed and tested again.

6. DOCUMENTATION

The Owner's Engineer shall document flushing, leakage, disinfection and bacteriological testing results on the forms provided in the appendices. The bacteriological test forms must be accompanied by the lab results. The completed documentation, along with any applicable fees, must be submitted to the District Engineer for review and approval prior to making connection to the municipal water distribution system.

7. CONNECTION TO EXISTING MAINS

The Owner's Engineer must receive written approval from District Engineer prior to connection. The District requires a minimum 48-hour notice for tie-in.

8. FINAL FLUSHING

Following connection, the line shall be flushed in accordance with AWWA C651-14, 4.9. New water mains must be thoroughly flushed with potable water to a minimum chlorine residual of 0.2 mg/l immediately following connection and pressurization of the waterworks.

9. HYDRANT SERVICING

9.1. The Owner's Engineer must notify the District Engineer immediately following connection to the municipal system in order to schedule fire hydrant servicing by District Operations staff per MMCD 33 11 01, 3.22. Hydrants must remain out of service and be bagged until servicing is completed.

9.2. Fire hydrants shall be painted and colour coded as per standard NFPA 291 and the District's Subdivision and Development Serving Bylaw. Refer to Appendix G for paint colouring and specifications. Paint is to be applied as specified in the recommendations from the manufacturer.

9.3. Numbering will be completed by the District.

10. VALVING

10.1 Owner's Engineer must ensure newly installed valves are exercised and left open.

11. APPENDICES

The following appendices may be amended or replaced from time to time. Any changes to wording will be as authorized by the Director of Engineering or Utilities Manager or their designate.
All appendices will be dated to ensure the most current schedule is being used and distributed to the public for use.

This policy provides procedures for connection of newly-constructed watermains to the municipal distribution system, additional guidance and forms are contained in the following appendices:

Appendix A – Watermain Flushing Form
Appendix B – Watermain Leakage Test Form
Appendix C – Watermain Disinfection Form
Appendix D – New Watermain Bacteriological Test Form
Appendix E – New Watermain Tie-In Plan
Appendix F – Alternative Watermain Flushing Procedures
Appendix G – Hydrant Paint Specifications

Signed:

Original signed by Tanya Garost
Tanya Garost, Chief Administrative Officer

April 28, 2021
Date

Amendment dated 2021-11-01

Tanya Garost
Tanya Garost, Chief Administrative Officer

2021-11-01
Date

Watermain Flushing Form

District of Lake Country
10150 Bottom Wood Lake Road
Lake Country, BC V4V 2M1
t: 250-766-6677 f: 250-766-0200
lakecountry.bc.ca

Flushing shall be completed in accordance with AWWA C605-13 & AWWA C651-14:

- Minimum velocity of 0.9m/s for three pipe volume exchanges
- Continue flushing until the turbidity is below 5 NTU

For watermains where flushing velocities cannot be achieved, methods consistent with the District's **Alternative Watermain Flushing Procedures** document may be accepted with prior approval from the District engineer.

PROJECT INFORMATION

Project Name:		Project File #	
Engineer:		Contractor:	
Date:			

TEST DATA

Pipe Size:		Flowrate Required:	(see table below)
Method of Measuring Flow:		Flow Rate Measured :	
		Times- Start & Finish:	

TEST RESULTS ☐ **Passed**

I hereby certify that this test has been performed in accordance with District of Lake Country Subdivision and Development Servicing Bylaw, District policy, and applicable standards.

_____ _____

Sealed and Signed by Professional Engineer Date

Pipe size (mm)	Minimum Flow Rate Rounded (L/S)
100	10
150	15
200	30
250	45
300	65
350	90
400	115
450	145
500	180
600	260

Watermain Leakage Test Form

District of Lake Country
10150 Bottom Wood Lake Road
Lake Country, BC V4V 2M1
t: 250-766-6677 f: 250-766-0200
lakecountry.bc.ca

Leakage testing must be done in accordance with AWWA C605-13, Section 10.3.

- Leakage test shall not be performed against a valve or other fitting connected to the existing District of Lake Country waterworks.
- The test pressure shall be the greater of 150psi(1035kpa) or 1.5x the operating pressure.
- No test pressure shall exceed the rated working pressure
- Test duration minimum is 2 hours

PROJECT INFORMATION

Project Name:		Project File #	
Engineer:		Contractor:	
Leakage Test Date:			

TEST DATA

Test Section Description:			
Static Pressure		Test Pressure	
Length of Main Tested (L):		Diameter (d)	
Type of Pipe:		Allowable Leakage per hour (Litres/hr)	
Measured Leakage (Litres):		(Litres/Hr)	
Duration of Test (Hr):			

ALLOWABLE LEAKAGE FORMULA

AWWA STANDARD C605
Allowable Loss Per Hour

$$= \frac{L \times D \times P^{1/2}}{795{,}000}$$

L = Length of main in meters
D = Diameter in millimeters
P = Test Pressure in Kilopascals
(6.9kPa = 1 psi)

TEST RESULTS ☐ **Passed**

I hereby certify that this test has been performed in accordance with District of Lake Country Subdivision and Development Servicing Bylaw, District Policy, and applicable standards.

_____ _____

Sealed and Signed by Professional Engineer Date

Watermain Disinfection Form

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Watermain Disinfection must be done in accordance with AWWA C651-14, Section 4. Chlorination shall be applied by the continuous feed method. The chlorine solution shall be injected at a measured rate such as to fill the main with a minimum of 50 mg/L and a maximum of 150 mg/L of available chlorine solution. The disinfection shall remain in the main for 24 hours and shall have a residual greater than 10 mg/L. Alternatives disinfection methods may be used with prior approval from District Engineer.

PROJECT INFORMATION

Project Name:		Project File #	
Engineer:		Contractor:	
Date of Disinfection:			

TEST DATA

Initial Chlorine Residual (mg/L):		Contact time (hours):	
Chlorine Residual after 24 hours (mg/L):			

Following disinfection and prior to bacteriological testing, waterlines must be flushed thoroughly until the system residual is achieved.

If the discharge water is to be released into a watercourse, storm drain or body of water, then it shall be treated to reduce the concentration of Total Residual Chlorine (TRC) below the levels established by the Government of British Columbia Ambient Water quality Criteria for Chlorine. At no time shall water from the District of Lake Country community water system be released into the environment with a TRC concentration greater than 0.1 mg/L.

TEST RESULTS ☐ **Passed**

I hereby certify that this test has been performed in accordance with District of Lake Country Subdivision and Development Servicing Bylaw, District Policy, and applicable standards.

Sealed and signed by Professional Engineer

Date

New Watermain Bacteriological Test Form

District of Lake Country
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t: 250-766-6677 f: 250-766-0200
lakecountry.bc.ca

Bacteriological testing must be done in accordance with AWWA C651-14, Section 5:
"Option A: Before approving a main for release, take an initial **set** of samples and then resample again after a minimum of 16 hr using the sampling site procedures outlined. Both **sets** of samples must pass for the main to be approved for release."
The Districts preferred method is Option A. Option B can be used with prior approval from the District engineer.
Testing shall be completed every 370m of new watermain being commissioned and all samples shall be analyzed by an independent accredited laboratory. Each test must be witnessed by a District representative (**A minimum of two days notice is required in scheduling a District representative)**. In addition to the general sample information, the sample bottles and sample forms must be sealed by the District of Lake Country and clearly labeled "**OFFLINE"**.

Quote File # _____ **on the lab report.**

PROJECT INFORMATION

Project Name:		Project File #	
Engineer:		Contractor:	
Sample Dates:			

TEST DATA

Test #1 Time:		Test #2 Time:	
Date:		Date:	
DLC witness initials [1]		DLC witness initials [1]	
Sample(s) sealed by:			
	Print Name:	Signature	Date

This form & test results must be submitted to the District engineer for approval prior to connecting. The works must be connected within seven calendar days of test #2 date, otherwise the watermain must be flushed and tested again. After connection the entire piping system shall be flushed in accordance with AWWA651-14.

TEST RESULTS ☐ **Passed**

I hereby certify that this test has been performed in accordance with District of Lake Country Subdivision and Development Servicing Bylaw, District Policy, and applicable standards.

Sealed and signed by Professional Engineer _____ Date _____

1- The owners engineer is responsible for the results of any test. DLC witness is only to ensure time, dates, and samples are sealed.

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NEW WATERMAIN TIE-IN PLAN

District of Lake Country
10150 Bottom Wood Lake Road
Lake Country, BC V4V 2M1
t: 250-766-6677 f: 250-766-0200
lakecountry.bc.ca

PROJECT NAME	
COMPANY NAME	
PROJECT MANAGER	
LOCATION	
SUBMISSION DATE	
***Note:**	The project engineer on record is required to review and sign off on the tie-in plan. The tie-in plan must be submitted a minimum of 30 days prior to the tentative tie-in date.
TIE-IN PLAN	Provide a step-by-step procedure: (Including activities required before, during, and after the tie-in)

	Post tie-in: Newly connected watermains must be thoroughly flushed with potable water to a minimum chlorine residual of 0.2 mg/l immediately following connection and pressurization of the waterworks. .
PARTS LIST	Provide a list of fittings and materials needed: (Include spare parts you will have on hand in case they are needed)
RISK IDENTIFICATION AND MITIGATION PLAN	Identify risks associated with this tie-in and what steps are being taken to mitigate: Contingency plan to mitigate risk:
SCHEDULE	Provide a tentative schedule for a pre-meeting, shutdown day, and the timing expected for tie-in to be complete and water can be turned back on.
NOTIFICATIONS/ PROPERTIES IMPACTED	Attach a list of properties impacted by the shutdown, a copy of the notification, and when they will be notified of the shutdown (suggested template attached):

LIST OF PERSONNEL AND QUALIFICATIONS	Identify the lead personnel that will be on site conducting the tie-in, including contact information. List their experience in conducting tie-ins of similar nature:
DRAWING	Sketch or attach a drawing that shows how the tie-in will be constructed. For complex or larger diameter piping the District may require an engineered sealed drawing.

LAKE COUNTRY

WATER WILL BE OFF IN YOUR NEIGHBOURHOOD

ON: _____ AT _____

FOR_____Hours

If you require more information, please call 250-766-6677 or visit www.lakecountry.bc.ca

LAKE COUNTRY

NOTICE OF WATER SHUT OFF

WATER WILL BE OFF IN YOUR NEIGHBORHOOD

ON: _____ AT _____

FOR_____Hours

If you require more information, please call 250-766-6677 or visit www.lakecountry.bc.ca

LAKE COUNTRY
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District of Lake Country

Alternative Water Main Flushing Procedures

District of Lake Country
4/19/2021

Contents

District of Lake Country Water Pipe Flushing Procedures

Background

The District of Lake Country utilises the American Water Works Association (AWWA) standards for all potable drinking water infrastructure works. The AWWA's ANSI/AWWA C651-14 is the standard for disinfecting water mains, the minimum recommended flushing velocities specified within this document are 3.0 ft/sec (0.91 m/sec). Achieving these velocities and the required quantity of water exchanges can be challenging and often operationally unachievable or just cost prohibitive. The AWWA does however provide alternative solutions to cleaning the pipe if the desired flushing velocities are unattainable that the utility owner may choose to utilise at their discretion.

The District's desire to meet the AWWA's minimum standards versus what is realistically achievable within the operational constraints is an ongoing challenge that requires a coherent solution.

Aim

To establish procedural options acceptable to the District for satisfactorily cleaning water main pipes when the AWWA's flushing velocities of 3.0 ft/sec (0.91 m/sec) cannot be realistically and/or practically achieved because of constraints such as adequate water supply and suitable water disposal areas. Especially when considering larger pipe diameters.

Procedural Approval Process

The following options are considered as acceptable solutions to flushing and disinfecting the water main pipes only when the AWWA's standards cannot be met due or reasons of practicality or cost. This decision will be at the discretion of the District engineer or their designate. Any alternative procedure must be submitted formally in writing at least **3 weeks prior** to the flushing event taking place to the District engineer. If approved, confirmation in writing will be returned.

Flushing Procedure Options

The following procedures, when approved by the Director of Infrastructure Services, may be employed in lieu of the AWWA's standard 0.9m/s:

1. Open Pipe Flushing

This technique is best suited to situations where the pipe has a suitable gradient that will ensure the minimum desired velocity is achieved. A free online tool for calculating the velocity can be found here: http://www.hawsedc.com/engcalcs/Manning-Pipe-Flow.php

This method involves leaving both end of the pipe open and flowing sufficient water to achieve the flushing velocities and water exchanges as stated by the AWWA. The benefit of this technique is that it doesn't require the pipe to be full of water and utilises the gradient to achieve the required velocity and therefore requires less volume of water which can also be delivered at a reduced flow rate. The wetted or scoured area is greatly reduced to a fraction of that achieved with closed pipe flushing, but with a combination of diligent pipe installation procedures and an experienced workforce, the reduced surface area may be acceptable.

Collection and disposal is to be managed in such a manner as not to detrimentally effect the to ensure environmental and infrastructure

When no drainage corridor option available the following technique is an one example of an option:

By creating a sump preferably lined with an impermeable membrane in which a sump pump can be placed and the water discharge pumped to a convenient dispersal point. As the ends of the pipe remain open during the flushing operations, extra care is to be taken to ensure the cleanliness of the pipe is maintained and that foreign material cannot be inadvertently introduced intro the pipe during flushing operations. See **Figure 1** for an example of open pipe flushing technique water disposal setup. There are numerous variations on this setup that will achieve the same results, the setup and procedures adopted will be scenario dependant as there are too many factors to consider to be able to prescribe one method that fits all. The Owner or designate will approve the technique prior to flushing procedures taking place.

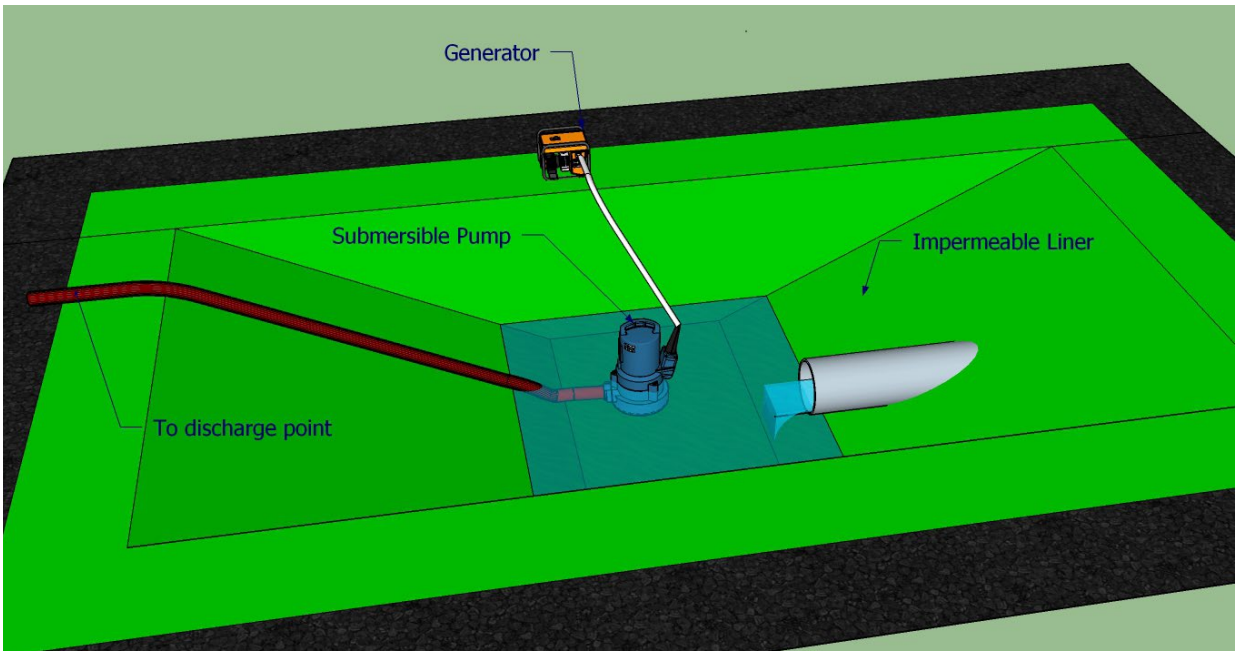

Figure 1. Example of Open Pipe Flushing Technique Water Disposal Setup

2. Pigging or Swabbing

This technique involves a tight fitting cylinder of material being forced through the pipe by water pressure to clean the pipe of any debris. This operation is typically performed by utilising a foam rubber 'pig' or 'swab' that is discharged through a temporary lead or an open fire hydrant barrel (i.e. main valve stem removed). A launch pit may be required to be excavated to allow the installation of a launch pipe on a wye junction and therefore proper working procedures are to be employed when such excavations are required. Consideration is to be given to the protection of the area surrounding the discharge point. If a hydrant is used, a barrier is to be placed to protect the ground surrounding the hydrant from erosion or saturation. This is often achieved using tarps or wooden boards.

Post Flushing Procedures

Once flushing has been performed by either Open Pipe Flushing or Pigging/Swabbing and to the satisfaction of the **Owner** or their representative or designate, the remaining sterilising and testing procedures shall be followed in accordance with District policy and AWWA standards.

End of document

Hydrant Barrels, Caps, and Bonnets Paint Requirements-

Fire hydrant barrels shall be painted "Fire Hydrant Green". Fire hydrant green paint specifications are included within Attachment #1 of this document.

Caps and bonnets shall be painted as per their rated flow capacity using colours that have been approved by the District:

(a) Rated Flow Capacity of 5,700L/min or greater – Blue Planetarium
(b) Rated Flow Capacity of 3,800-5,699L/min – Forest Green
(c) Rated Flow Capacity of 1,900-3,799L/min – Safety Orange
(d) Rated Flow Capacity of less than 1,900L/min – Safety Red

Blue Planetarium paint specifications are included within Attachment #1 of this document. Forest Green, Safety Orange, and Safety Red paint specifications are included within Attachment #2 of this document.

Alternate paints must use an industrial alkyd gloss enamel and be approved by the District.

Attachment #1:

“Fire Hydrant Green is used to paint fire hydrant barrels. Blue Planetarium is for required hydrant bonnets and caps. These colours are not available pre-mixed but can be created using a urethane modified low VOC alkyd gloss enamel base. The base specifications and appropriate colorants are listed below:

Kelowna, BC V1Y 4R1
250-860-3452

CUSTOMER : **District of Lake**
JOB INFO :
JOB LOCATION :

COLOR
Fire Hydrant Green
PRODUCT
4308HC INDUSTRIAL ALKYD
BASE
4308-0900HC NEUTRAL
CAN SIZE
1 Gallon

COLORANTS
CX 1Y + 21
DX 15
GX 3Y + 22½
WX 4Y + 39½

Kelowna, BC V1Y 4R1
250-860-3452

CUSTOMER : **District of Lake Country**
JOB INFO :
JOB LOCATION :

COLOR
BLUE Planetarium
PRODUCT
4308HC INDUSTRIAL ALKYD
BASE
4308-0900HC NEUTRAL
CAN SIZE
1 Gallon

COLORANTS
DX 41½
EX 6Y + 27
LX 16½
WX 2Y + 13

Attachment #2:

Dulux Metalclad anti-rust paint 218400 series with a gloss finish for hydrant caps and bonnets – Forest Green, Safety Orange, and Safety Red.

DULUX METALCLAD ANTI-RUST PAINT 218400 SERIES

Solvent-based product, gloss finish

Technical Data Sheet

Technical Specifications (21°C (70°F))

Solids by Volume – 49% (+/- 1%)
Solids by Weight – 65% (+/- 1%)

Volatile Organic Compounds (VOCs)*

According to ASTM D3960-05: < 400 g/L
Canadian regulation: < 400 g/L

Colour

White, medium and ultra deep bases

Pre-mixed colours: Oxford Brown 218404, Marine Blue 218412, Safety Yellow 218413, Forest Green 218414, Safety Red 218419, Safety Orange 218427, Black 218420, Flat Black 218421

Gloss Level	**Gloss Finish**
• Gloss @ 60° - 85 - 100%	

Practical Coverage

430 - 520 sq. ft. per 3.78 litres
11 - 13 sq. metres per litre
(Actual coverage will vary depending on substrate and application method.)

Resin Type

• Alkyd

Viscosity*	Ready to use (78 - 88 Krebs Units)
Flammability	Combustible Liquid
Flash Point*	42°C (108°F)

Recommended Film Thickness*

• Wet: 3.2 mils
• Dry: 1.6 mils

Drying Time* @ 77°F/25°C - 50% Relative Humidity

**Drying & recoat times are dependent on temperature, humidity, ventilation and film thickness*

Touch dry:	6 hours
To recoat:	16 hours
Before cleaning:	30 days

*Technical Data Source: 218400

Product Description

Dulux Metalclad 218400 is a premium quality, interior/exterior, urethane fortified paint formulated to form a protective coating on metal that will retard and resist rust.

Dulux Metalclad 218400:

- Excellent durability
- Superior leveling properties
- Self priming on ferrous metal
- Dries quickly to a uniform gloss finish
- Lead and mercury free
- Excellent protection against corrosion
- Excellent moisture resistance

Intended Uses

- Interior/exterior new and maintenance work
- Residential and Commercial sites
- Metal surfaces only
- New or rusted ferrous metal: furniture, doors, windows, fences, roofs, stairs, machinery, ornamental iron, pipes fire-hydrants etc.
- Pre-mixed colours can be used on marine equipment (above the waterline)

Available at Dulux Paints Stores across Canada and Betonel-Dulux Stores in Québec

SURFACE PREPARATION

All surfaces must be clean, dry and free of dirt, chalk, grease, wax, rust and loose or peeling paint before painting.

- Mildew must be removed by washing affected area with a solution of 30% household bleach and 70% water. Rinse well.
- Remove all loose and peeling paint and sand to smooth edges.
- Remove all rust, oil and grease. Wash well with mineral spirits and dry with clean rags
- Sand all surfaces smooth and lightly sand glossy areas. Vacuum sanding residue.
  Precaution: Dry sanding, flame cutting and/or welding of dry paint film will give rise to dust and/or hazardous fumes. Wet sanding should be used wherever possible. If exposure cannot be avoided by the provision of local exhaust ventilation, suitable respiratory protective equipment should be used.

Application

Ready-to-use product, do not thin.
Mix thoroughly before use.
Keep containers closed when not in use.
Apply using brushes, rollers or spray equipment.

Application Conditions

Apply with good ventilation. Ensure air, material and surface temperatures are above 50°F (10°C) within 3 to 6 hours of painting. Ideal relative humidity 15 – 50%, maximum 85%
Do not apply if rain, snow or heavy dew is expected within 16 hours. Avoid painting in direct sunlight.

Tools

- Brush – natural bristle
- Roller – 10–15 mil
- Spray (Airless equipment) – tip size:0.013 to 0.019 in - Pressure: 2300 – 2700 psi

**Spray recommendations may vary from figures listed depending on equipment manufacturer*

SYSTEM RECOMMENDATIONS

Two topcoats are recommended on all surfaces for better durability and appearance.

Ferrous Metal:
- Dulux Metalclad 218400 series or one coat of Dulux Metalclad Red Oxide Rust Preventative Coating
- Dulux Metalclad 218400 series

Non Ferrous Metal:
Interior (dry environments)
- Dulux Metalclad 218400 series or one coat of Dulux Metalclad Red Oxide Rust Preventative Coating
- Dulux Metalclad 218400 series

Exterior
- 1st coat Devguard 4360 – one coat
- Dulux Metalclad 218400 series

***Devguard 4360** is intended for use only by professional applicators in accordance with the advice given on this sheet, the MSDS and the container(s), and should not be used without reference to the MSDS.*

Clean-up

Clean hands and tools immediately with mineral spirits.

Storage and Transportation

Keep product in a dry and ventilated area, between 10 - 30°C (50 – 86°F).
DO NOT FREEZE

Disposal

Consult your municipality about proper disposal procedures in accordance with the laws and respect the environment or give leftover paint to someone who could use it: a neighbor or friend, a recreational service or a non-profit organization. Do not pour leftover product down the drain.

Safety Measures

Read the Material Safety Data Sheet. Avoid contact with eyes. Keep out of reach of children. Use only in well ventilated areas. Do not intentionally breathe vapour. Keep away from flames or sparks.
FIRST AID TREATMENT: If in contact with eyes, rinse thoroughly with clear water. If swallowed, do not induce vomiting. Call poison centre or physician immediately.

For product information call: 1-(800)-387-3663
www.dulux.ca

This technical data sheet, No. 218400, replaces all earlier versions. Edition of January 2012