



# Hilti X-CC U CEILING CLIP with Nail

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## Ceiling hanger X-CC

### APPLICATIONS

- Ceiling suspensions on concrete and steel



**Order Now**



Ordering designation	Shank length	Shank diameter	Base material	Sales pack quantity	Item number
X-CC U 16 P8	16 mm	4 mm	Steel	100 pc	386228 <sup>1)</sup>
X-CC U 22 P8	22 mm	4 mm	Hard Concrete	100 pc	386229 <sup>1)</sup>
X-CC U 27 P8	27 mm	4 mm	Concrete	100 pc	286230

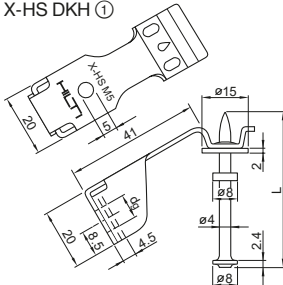
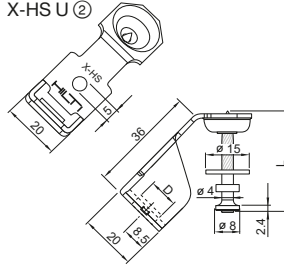
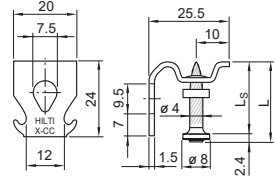
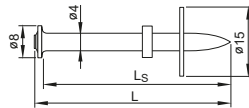
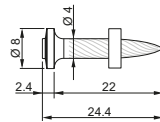
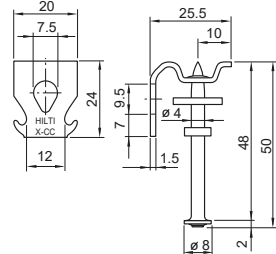
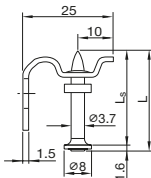
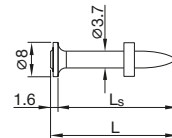
<sup>1)</sup> For detailed stock availability and lead time information please contact your Hilti representative.

Please visit [Hilti website](#) for the latest item numbers and related products

# X-HS and X-CC Threaded hanger and loop hanger system

## Product data

### Dimensions

**X-HS DKH ①**

**X-HS U ②**

**X-CC U ③**

**DKH 48 P8S15**

**X-U\_P8**

**X-CC DKH 48 P8 S15 ③**

**X-CC CS**

**X-CS\_P8**


### Material specifications

Carbon steel shank: HRC 58 X-HS M \_ DKH, X-HS M/W\_U, X-CC\_U  
HRC 56 X-CC\_CS

X-HS: Zinc coating: 10  $\mu\text{m}$

X-CC U: Zinc coating: 2.5  $\mu\text{m}$

X-CC CS : Zinc coating:  $\geq 5 \mu\text{m}$

X-U / DKH Nail: Zinc coating: 5–20  $\mu\text{m}$

X-CS Nail: Zinc coating: 5–20  $\mu\text{m}$

### Recommended fastening tools

DX 6 F8, DX 5 F8, DX 460-F8, DX 351-F8, DX 36, DX 2, DX E72



• See system recommendation in the next pages.

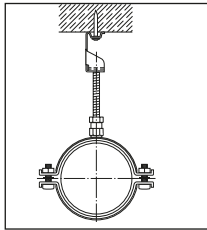
## Approvals and certificates

Lloyds Register: X-HS  
 ICC, UL, FM: X-HS W6/10

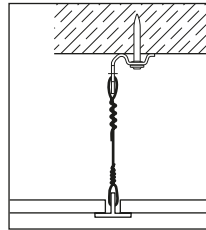
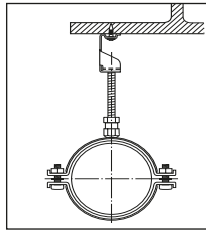
Not all information presented in this product data sheet might be subject to approval / certificate content. Please refer to approval / certificate for further information.

## Applications

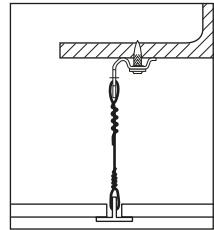
### Examples



Threaded rod attachments to concrete and steel



Wire attachments to concrete and steel

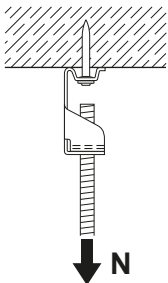


## Performance data

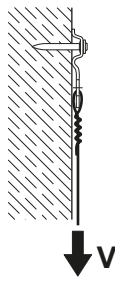
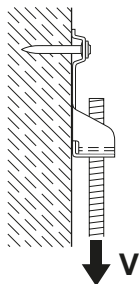
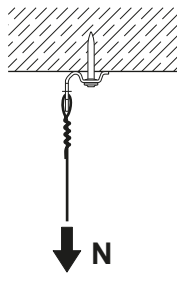
### Recommended resistance under tension and shear load

Concrete (DX-Kwik with pre-drilling) or steel

X-HS



X-CC



Designation

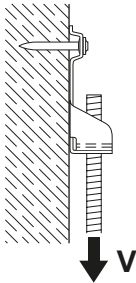
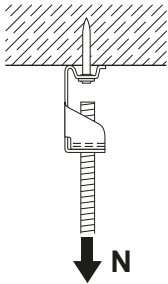
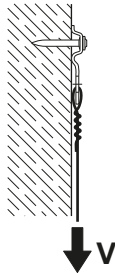
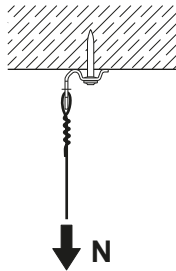
$N_{rec} = V_{rec}$

Base material

X-HS __ DKH 48	0.9 kN	Concrete
X-HS __ U19	0.9 kN	Steel
X-CC DKH 48	0.9 kN	Concrete
X-CC U16	0.9 kN	Steel

### Conditions

- Predominantly static loading.
- Concrete C20/25–C50/60
- Strength of fastened material is not limiting.
- Observance of all application limitations and recommendations (especially pre-drilling requirements).

**Concrete (DX Standard without pre-drilling)**
**X-HS**

**X-CC**


Designation	$N_{rec}$	$V_{rec}$	$h_{ET}$
X-HS_U32	0.4 kN	0.4 kN	27 mm
X-HS_U27	0.3 kN	0.3 kN	22 mm
X-HS_U22	0.2kN	0.2 kN	18 mm
X-CC_U27	0.2* kN	0.3 kN	22 mm
X-CC_U22	0.15* kN	0.2 kN	18 mm
X-CC_CS27	0.2 kN	0.3 kN	22 mm
X-CC_CS22	0.15 kN	0.2 kN	18 mm

\*) eccentric loading considered

**Conditions**

- Minimum 5 fastenings per fastened unit (normal weight concrete) (For primary fastening).
- All visible failures must be replaced.
- With lightweight concrete base material and appropriate washers, greater loading may be possible, please contact Hilti.
- Predominantly static loading.
- Observance of all application limitations and recommendations.



- For more details in relation to base material properties, please refer to the chapter **Fastener selection guide** in the Direct Fastening Manual (DFTM).

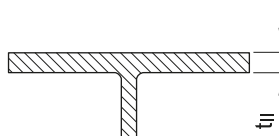
**Application recommendation**
**Base material thickness**
**Concrete**

DX-Kwik

 (with pre-drilling)  $h_{min} = 100$  mm

DX Standard

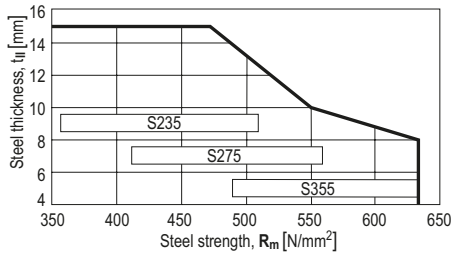
 (w/o pre-drilling)  $h_{min} = 80$  mm

**Steel**
 $t_{fl} \geq 4$  mm

**Fastener positioning**

Minimum spacing and edge distances: See corresponding nail data sheet of X-U and X-DKH.

## Application limits

### Fastening to steel – X-HS U19 with DX351



Application limit may increase in case of specific applications, like the fastening of wire mesh to steel, which is connected with X-CC U16 P8 fasteners. That wire mesh acts as reinforcement for fire protective sprayed coating. In such cases also different fastener stand-offs apply. Inquire at Hilti related with the use of X-CC U16 P8 in that specific application.

## Corrosion information



- These zinc-coated fasteners are not suitable for long-term service outdoors or in otherwise corrosive environments.
- For more details, please refer to following technical document: Hilti Corrosion Handbook.

**System recommendation**


• For more details, please refer to the chapter **Accessories and consumables compatibility** in the Direct Fastening Technology Manual (DFTM).

**Technical information**

Designation	Shank diameter $d_s$	Shank length $L_s$	Fastener length $L$	Base material	Tools
① X-HS_ DKH 48 P8S15	4.0 mm	48 mm	50.0 mm	Concrete pre-drilled	DX 6 F8, DX 5 F8, DX 460-F8
② X-HS_ U 32 P8S15	4.0 mm	32 mm	34.4 mm	Concrete	DX 6 F8,
② X-HS_ U 27 P8S15	4.0 mm	27 mm	29.4 mm	Concrete	DX 5 F8,
② X-HS_ U 22 P8S15	4.0 mm	22 mm	24.4 mm	Concrete	DX 460-F8,
② X-HS_ U 19 P8S15	4.0 mm	19 mm	21.4 mm	Steel	DX 351-F8, DX 36, DX 2
③ X-CC DKH 48 P8S15	4.0 mm	48 mm	50.0 mm	Concrete pre-drilled	DX 6 F8, DX 5 F8, DX 460-F8
③ X-CC U 27 P8	4.0 mm	27 mm	29.4 mm	Concrete	DX 6 F8,
③ X-CC U 22 P8	4.0 mm	22 mm	24.4 mm	Concrete	DX 5 F8,
③ X-CC U 16 P8	4.0 mm	16 mm	18.4 mm	Steel	DX 460-F8, DX 351-F8, DX 36, DX 2

**Cartridge recommendation for fastening on concrete**

Base material	Cartridge color (tool power level)	
	Tool type: DX 6 F8	Tool type: DX 5 F8, DX 460 F8, DX 2, DX 351 F8
	Cartridge type: 6.8/11 M	Cartridge type: 6.8/11 M
Soft/medium concrete	titanium ■ (2-5)	yellow ■, red ■
Tough concrete	titanium ■ (4-8)	yellow ■, red ■

### Cartridge recommendation for fastening on steel

Base material		Cartridge color (tool power level)	
		Tool type: DX 6 F8	Tool type: DX 5 F8, DX 460 F8, DX 2, DX 351 F8
		Cartridge type: 6.8/11 M	Cartridge type: 6.8/11 M
S235,	$4 \leq t_{II} \leq 6 \text{ mm}$	titanium ■ (1-3)	green ■
S275,	$6 < t_{II} \leq 14 \text{ mm}$	titanium ■ (4-8)	red ■
S355			

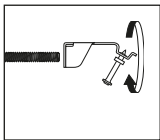


- Tool power level adjustment by setting tests on site.
- Start tool energy selection with lowest recommended tool power level.
- Correct according requirement from chapter quality assurance.

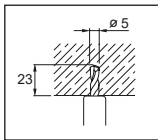
### Quality assurance

#### Installation

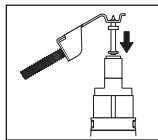
##### X-HS



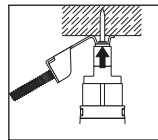
1. Attach the threaded rod to the X-HS before fastening



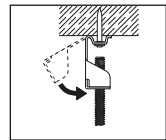
2. For DKH 48 pre-drill ( $\varnothing 5 \times 23$ )



3. Load the assembly into the tool

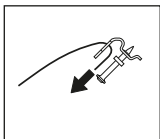


4. Locate the nail, compress the tool, pull the trigger and the fastening is complete

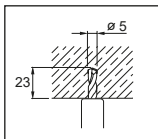


5. Bend the X-HS assembly down to the vertical position

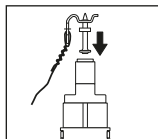
##### X-CC



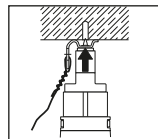
1. Assemble the wire with the X-CC



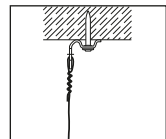
2. For DKH 48 pre-drill ( $\varnothing 5 \times 23$ )



3. Load the assembly into the tool

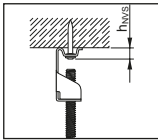
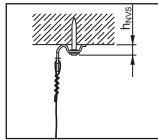
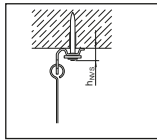


4. Locate the nail, compress the tool, pull the trigger and the fastening is complete



5. Adjust the wire as required



**Setting depth control**
**X-HS**

 $h_{NVS} = 6-10 \text{ mm}$ 
**X-CC**

 $h_{NVS} = 4-7 \text{ mm}$ 
**X-CC DKH48 P8 S15**

 $h_{NVS} = 6-10 \text{ mm}$ 

These are abbreviated instructions which may vary by application.

**ALWAYS** review/follow the instructions accompanying the product.

**Fastener program**

Item no. and description

**X-HS order information**

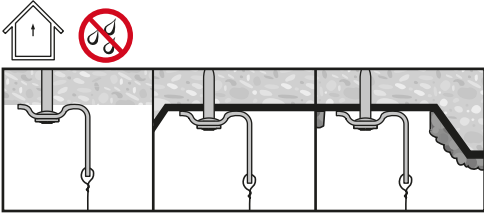
Item no.	Designation	Item no.	Designation
361788	X-HS M6 U32 P8 S15	386214	X-HS M8 U19 P8 S15
386223	X-HS M6 U27 P8 S15	386215	X-HS M10 U19 P8 S15
361789	X-HS M8 U32 P8 S15	386217	X-HS W10 U19 P8 S15
386224	X-HS M8 U27 P8 S15	386218	X-HS M6 U22 P8 S15
361790	X-HS M10 U32 P8 S15	386219	X-HS M8 U22 P8 S15
386225	X-HS M10 U27 P8 S15	386222	X-HS W10 U22 P8 S15
386226	X-HS W6 U27 P8 S15	386216	X-HS W6 U19 P8 S15
386227	X-HS W10 U27 P8 S15	386220	X-HS M10 U22 P8 S15
386213	X-HS M6 U19 P8 S15	386221	X-HS W6 U22 P8 S15



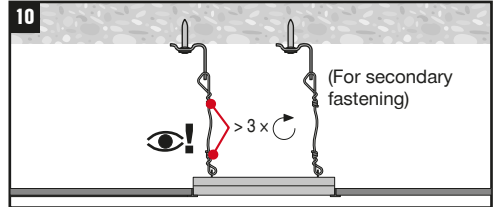
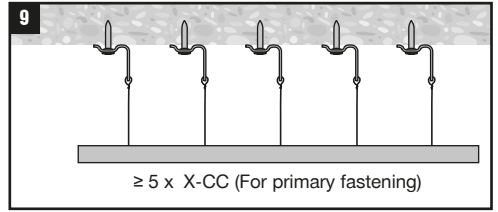
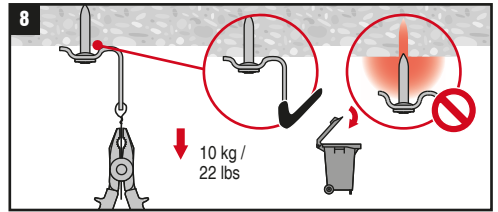
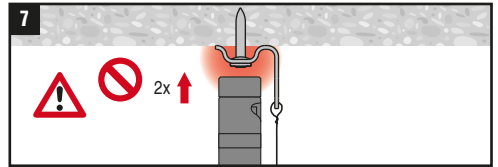
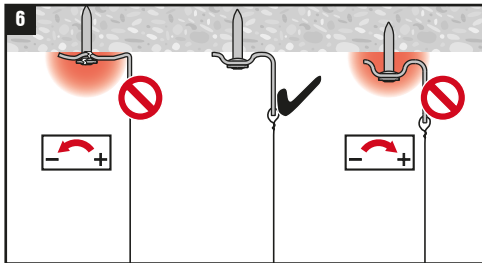
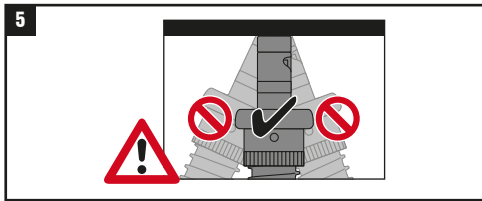
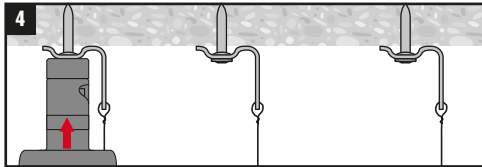
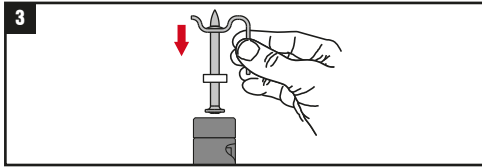
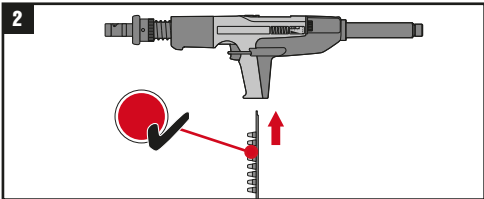
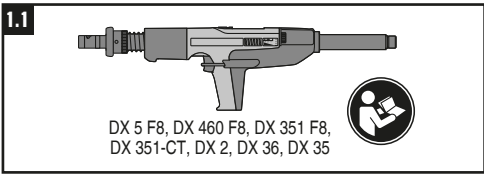
• Type of threading: M = metric; W6, W10 = Whitworth 1/4"; 3/8"

**X-CC order information**

Item no.	Designation
386229	X-CC U22 P8
386230	X-CC U27 P8
299937	X-CC DKH P8 S15
386228	X-CC U16 P8
2006454	X-CC CS22 P8
2005065	X-CC CS27 P8



<b>1</b>			AAAAAAAAAA
DX 351-CT	X-FG8 ME 351/S351		6.8/11M
DX 351 F8	X-351-F8CT		
DX 5 F8	X-5-460-F8CW		6.3/10M
DX 6 F8	X-5-460-F8		
DX 460 F8	X-2-F8, X-2-S		
DX2	36/F3/36/S13		
DX 36	X-35-F8CW/21/F3-1/21/S1		
DX 35			



# DX-Cartridge

## Safety Data Sheet

according to the United Nations GHS (Rev. 4, 2011)

Issue date: 20/10/2021

Revision date: 20/10/2021

Supersedes: 12/04/2017

Version: 2.6

### SECTION 1: Identification

#### 1.1. GHS Product identifier

Product form	Article
Trade name	DX-Cartridge
UN-No. (ADR)	0323
Product code	BU Direct Fastening

#### 1.2. Other means of identification

No additional information available

#### 1.3. Recommended use of the chemical and restrictions on use

Use of the substance/mixture	CARTRIDGES FOR TOOLS, BLANK
Recommended uses and restrictions	For professional use only

#### 1.4. Supplier's details

<b>Supplier</b>	<b>Department issuing data specification sheet</b>
Hilti (Hong Kong) Ltd.	Hilti Entwicklungsgesellschaft mbH
701-704, 7/F, Tower A, Manulife Financial Centre	Hiltistraße 6
223 Wai Yip Street, Kwun Tong	86916 Kaufering - Deutschland
Kowloon - Hong Kong	T +49 8191 906876
T +852 27734 700	

#### 1.5. Emergency phone number

Emergency number	Schweizerisches Toxikologisches Informationszentrum – 24h Service +41 44 251 51 51 (international) +852 27734 700
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### SECTION 2: Hazard identification

The dismantling of the article is prohibited!, This article contains hazardous substances or preparations not intended to be released under normal or reasonably foreseeable conditions of use.

#### 2.1. Classification of the substance or mixture

##### Classification according to the United Nations GHS

Explosives, Division 1.4	H204	Expert judgment
--------------------------	------	-----------------

Full text of H-statements: see section 16

#### 2.2. GHS Label elements, including precautionary statements

##### Labelling according to the United Nations GHS

Hazard pictograms (GHS UN)



Signal word (GHS UN)

GHS01

Warning

Hazard statements (GHS UN)

H204 - Fire or projection hazard

# DX-Cartridge

## Safety Data Sheet

according to the United Nations GHS (Rev. 4, 2011)

Precautionary statements (GHS UN)	<p>P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.</p> <p>P250 - Do not subject to shock, friction, grinding.</p> <p>P280 - Wear eye protection.</p> <p>P372 - Explosion risk.</p> <p>P370+P380+P375 - In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion.</p> <p>P401 - Store in accordance with local regulations on explosives.</p>
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### 2.3. Other hazards which do not result in classification

Other hazards not contributing to the classification	This article contains hazardous substances or preparations not intended to be released under normal or reasonably foreseeable conditions of use., The dismantling of the article is prohibited!, Keep away from ignition sources (including static discharges)
--	--

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Comments	<p>max. net explosives weight each cartridge in mg:            Caliber 6.8/11 (cal .27 short) white: 130; brown: 140; green: 160; yellow: 180; red: 230; titanium: 230; black: 260            Caliber 6.8/18 (cal .27 long) green: 190; yellow: 220; blue: 300; red: 330; black: 410            Caliber 6.3/10 (cal. 25) green: 120; yellow: 190; red: 230; black: 250            Caliber 5.5/16 (cal .22) grey: 105; brown: 120; green: 175; yellow: 210; red: 270</p> <p>Within the cartridges the explosive ingredients (gun powder and priming composition) are hermetically separated from the environment. They will be only opened with effort and under destruction of the article.</p> <p>Propellant powder: glycerol trinitrate containing nitrocellulose powder            Mass per cartridge: essentially dependent on the required power (100-400 mg)            Priming composition: SINOXID (initiating explosive) Mass per cartridge: 22-33 mg in the mean.</p> <p>Exposed propellant powder outside a cartridge is harmful if swallowed and highly flammable; without tamping no explosion risk.</p> <p>Packed safety cartridges don't represent a significant risk.</p> <p>In case of reaction no dangerous fragments or projectiles will be formed.</p> <p>Mechanical or thermal attempts to expose the primer composition lead to an immediate reaction of the dangerous ingredients.</p>
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Name	Product identifier	%	Classification according to the United Nations GHS
cellulose nitrate	(CAS-No.) 9004-70-0	5 - 21	Explosives, Division 1.1, H201
glycerol trinitrate	(CAS-No.) 55-63-0	2 - 10	Explosives, Unstable explosives, H200 Acute toxicity (oral), Category 2, H300 Acute toxicity (dermal), Category 1, H310 Acute toxicity (inhal.), Category 2, H330 Specific target organ toxicity — Repeated exposure, Category 2, H373 Hazardous to the aquatic environment — Acute Hazard, Category 2, H401 Hazardous to the aquatic environment — Chronic Hazard, Category 2, H411
lead styphnate	(CAS-No.) 15245-44-0	0.1 - 3	Explosives, Unstable explosives, H200 Acute toxicity (oral), Category 4, H302 Acute toxicity (inhalation:dust,mist) Category 4, H332 Reproductive toxicity, Category 1A, H360 Specific target organ toxicity — Repeated exposure, Category 2, H373 Hazardous to the aquatic environment — Acute Hazard, Category 1, H400 Hazardous to the aquatic environment — Chronic Hazard, Category 1, H410
barium nitrate	(CAS-No.) 10022-31-8	0.1 - 3	Acute toxicity (oral), Category 3, H301

# DX-Cartridge

## Safety Data Sheet

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			Hazardous to the aquatic environment - Acute Hazard Not classified Hazardous to the aquatic environment - Chronic Hazard Not classified
copper	(CAS-No.) 7440-50-8	0 – 2	Hazardous to the aquatic environment — Acute Hazard, Category 1, H400 Hazardous to the aquatic environment — Chronic Hazard, Category 3, H412
zinc	(CAS-No.) 7440-66-6	0 – 2	Hazardous to the aquatic environment — Acute Hazard, Category 1, H400 Hazardous to the aquatic environment — Chronic Hazard, Category 1, H410
diphenylamine	(CAS-No.) 122-39-4	0.1 - 1	Acute toxicity (oral), Category 3, H301 Acute toxicity (dermal), Category 3, H311 Acute toxicity (inhal.), Category 3, H331 Specific target organ toxicity — Repeated exposure, Category 2, H373 Hazardous to the aquatic environment — Acute Hazard, Category 1, H400 Hazardous to the aquatic environment — Chronic Hazard, Category 1, H410
tetrazene	(CAS-No.) 109-27-3	0 – 1	Explosives, Unstable explosives, H200 Serious eye damage/eye irritation, Category 2A, H319 Hazardous to the aquatic environment — Acute Hazard, Category 1, H400 Hazardous to the aquatic environment — Chronic Hazard, Category 1, H410

Full text of H-statements: see section 16

## SECTION 4: First-aid measures

### 4.1. Description of necessary first-aid measures

First-aid measures general	In all cases of doubt, or when symptoms persist, seek medical attention.
First-aid measures after inhalation	Allow affected person to breathe fresh air. Allow the victim to rest.
First-aid measures after skin contact	Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
First-aid measures after eye contact	Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists.
First-aid measures after ingestion	Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

### 4.2. Most important symptoms/effects, acute and delayed

Symptoms/effects	Not expected to present a significant hazard under anticipated conditions of normal use.
Potential adverse human health effects and symptoms	No additional information available. No harmful effects are to be expected if used properly. The contained ingredients can be harmful, but they are hermetically enclosed in the article and can not be released. The dismantling of the article is prohibited.

### 4.3. Indication of immediate medical attention and special treatment needed, if necessary

No additional information available

## SECTION 5: Fire-fighting measures

### 5.1. Suitable extinguishing media

Suitable extinguishing media	Dry powder. Water spray.
Unsuitable extinguishing media	Do not use a heavy water stream.

### 5.2. Specific hazards arising from the chemical

Hazardous decomposition products in case of fire	Carbon monoxide. Carbon dioxide (CO <sub>2</sub> ). Nitrous gasses.
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# DX-Cartridge

## Safety Data Sheet

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### 5.3. Special protective actions for fire-fighters

Firefighting instructions	Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.
Protection during firefighting	Do not enter fire area without proper protective equipment, including respiratory protection.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

General measures	Remove ignition sources. Use special care to avoid static electric charges. No open flames. No smoking.
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#### 6.1.1. For non-emergency personnel

Emergency procedures	Evacuate unnecessary personnel.
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#### 6.1.2. For emergency responders

Protective equipment	Equip cleanup crew with proper protection.
Emergency procedures	Ventilate area.

### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

### 6.3. Methods and materials for containment and cleaning up

Methods for cleaning up	Pick up loose cartridges only by hand. Exposed ingredients must be swept up carefully and phlegmatized in a water container, labelled according to the regulations, wipe down with water the contaminated area. Store away from other materials.
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## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling	Do not subject to grinding, shock, friction. Take precautionary measures against static discharge. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.
Hygiene measures	Do not eat, drink or smoke when using this product. Always wash hands after handling the product.
Additional hazards when processed	Hazardous waste due to potential risk of explosion.

### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	Keep only in the original container in a cool, well ventilated place away from : Direct sunlight, Heat sources. Store in a dry place.
Storage area	Store away from heat.
Incompatible products	Strong bases. Strong acids.
Information on mixed storage	Keep away from : Ignition sources. Do not store with: Store according to local legislation.
Storage temperature	5 – 25 °C

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

No additional information available

### 8.2. Appropriate engineering controls

Other information	Do not eat, drink or smoke during use.
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### 8.3. Individual protection measures, such as personal protective equipment (PPE)

Eye protection Safety glasses  
 Skin and body protection When using cartridge operated tools, sufficient ear protection must be worn.  
 Personal protective equipment symbol(s)



### 8.4. Exposure limit values for the other components

No additional information available

## SECTION 9: Physical and chemical properties

### 9.1. Basic physical and chemical properties

Physical state	Solid
Colour	According to product specification.
Odour	Not available
Odour threshold	Not available
Melting point	Not available
Freezing point	Not available
Boiling point	Not available
Flammability (solid, gas)	Not available
Explosive limits	Not applicable
Lower explosive limit (LEL)	Not applicable
Upper explosive limit (UEL)	Not applicable
Flash point	Not applicable
Auto-ignition temperature	Not applicable
Decomposition temperature	Not available
pH	Not available
pH solution	Not available
Viscosity, kinematic (calculated value) (40 °C)	Not applicable
Partition coefficient n-octanol/water (Log Kow)	Not available
Vapour pressure	Not available
Vapour pressure at 50 °C	Not available
Density	Not available
Relative density	Not available
Relative vapour density at 20 °C	Not applicable
Solubility	Not available
Explosive properties	Fire or projection hazard.
Particle size	Not available
Particle size distribution	Not available
Particle shape	Not available
Particle aspect ratio	Not available
Particle specific surface area	Not available

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### 9.2. Data relevant with regard to physical hazard classes (supplemental)

Additional information Not applicable  
Article

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No additional information available

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

Not established.

### 10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Heat. Sparks. Open flame. Overheating.

### 10.5. Incompatible materials

Strong acids. Strong bases.

### 10.6. Hazardous decomposition products

Carbon monoxide. Carbon dioxide. Nitrogen oxides. Metal oxides. Thermal decomposition can lead to the release of irritating gases and vapours.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity (oral) Not classified  
Acute toxicity (dermal) Not classified  
Acute toxicity (inhalation) Not classified

<b>glycerol trinitrate (55-63-0)</b>	
LD50 oral rat	685 mg/kg bodyweight (Rat, Male / female, Experimental value, Oral, 14 day(s))
LD50 oral	685 mg/kg
LD50 dermal rat	> 9560 mg/kg bodyweight (Equivalent or similar to OECD 402, Rat, Male / female, Experimental value, Dermal)
<b>diphenylamine (122-39-4)</b>	
LD50 oral rat	> 800 mg/kg bodyweight (Rat, Male, Experimental value, Oral)
<b>barium nitrate (10022-31-8)</b>	
LD50 oral rat	50 – 300 mg/kg bodyweight (OECD 423: Acute Oral Toxicity – Acute Toxic Class Method, Rat, Female, Experimental value, Oral, 14 day(s))
LD50 oral	355 mg/kg
LD50 dermal rat	> 2000 mg/kg bodyweight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Dermal, 14 day(s))
LC50 Inhalation - Rat	> 1.1 mg/l (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male / female, Experimental value, Inhalation (aerosol), 14 day(s))
<b>zinc (7440-66-6)</b>	
LD50 oral rat	> 2000 mg/kg bodyweight (OECD 401: Acute Oral Toxicity, Rat, Male / female, Experimental value, Oral, 14 day(s))

Skin corrosion/irritation Not classified  
Serious eye damage/irritation Not classified  
Respiratory or skin sensitisation Not classified  
Germ cell mutagenicity Not classified  
Carcinogenicity Not classified  
Reproductive toxicity Not classified



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STOT-single exposure	Not classified
STOT-repeated exposure	Not classified
Aspiration hazard	Not classified
Potential adverse human health effects and symptoms	No additional information available. No harmful effects are to be expected if used properly. The contained ingredients can be harmful, but they are hermetically enclosed in the article and can not be released. The dismantling of the article is prohibited.

### SECTION 12: Ecological information

#### 12.1. Toxicity

Ecology - general	No harmful effects are to be expected if used properly. The contained ingredients can be harmful, but they are hermetically enclosed in the article and can not be released. The dismantling of the article is prohibited.
Hazardous to the aquatic environment, short-term (acute)	Not classified
Hazardous to the aquatic environment, long-term (chronic)	Not classified

glycerol trinitrate (55-63-0)	
LC50 - Fish [1]	1.9 mg/l (ASTM E729-80, 96 h, Oncorhynchus mykiss, Flow-through system, Fresh water, Experimental value, Lethal)
NOEC chronic fish	0.03 mg/l
lead styphnate (15245-44-0)	
EC50 - Crustacea [1]	7 mg/l
diphenylamine (122-39-4)	
EC50 - Crustacea [1]	2 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Fresh water, Experimental value, Locomotor effect)
ErC50 algae	2.17 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Experimental value, GLP)
NOEC chronic algae	0.0273 mg/l
barium nitrate (10022-31-8)	
EC50 - Crustacea [1]	9018 mg/l
EC50 72h - Algae [1]	> 45.6 mg/l (OECD 201: Alga, Growth Inhibition Test, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, Growth rate)
tetrazene (109-27-3)	
EC50 - Crustacea [1]	0.14 mg/l
copper (7440-50-8)	
LC50 - Fish [1]	200 µg/l (96 h, Salmo gairdneri, Flow-through system, Fresh water, Weight of evidence, Lethal)
EC50 - Crustacea [1]	109 – 798 µg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Weight of evidence, Locomotor effect)
EC50 72h - Algae [1]	230 µg/l (OECD 201: Alga, Growth Inhibition Test, Pseudokirchneriella subcapitata, Static system, Fresh water, Weight of evidence, Growth rate)
zinc (7440-66-6)	
LC50 - Fish [1]	0.169 mg/l (Other, 96 h, Oncorhynchus mykiss, Static system, Fresh water, Read-across, Zinc ion)
EC50 - Crustacea [1]	416 µg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Ceriodaphnia dubia, Static system, Fresh water, Experimental value)
ErC50 algae	0.15 mg/l

#### 12.2. Persistence and degradability

DX-Cartridge	
Persistence and degradability	Not established.
glycerol trinitrate (55-63-0)	
Not rapidly degradable	

# DX-Cartridge

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Persistence and degradability	Readily biodegradable in water.
Biochemical oxygen demand (BOD)	53.6 g O <sub>2</sub> /g substance
lead styphnate (15245-44-0)	
Not rapidly degradable	
diphenylamine (122-39-4)	
Not rapidly degradable	
Persistence and degradability	Not readily biodegradable in water.
ThOD	2.39 g O <sub>2</sub> /g substance
barium nitrate (10022-31-8)	
Not rapidly degradable	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)
tetrazene (109-27-3)	
Not rapidly degradable	
copper (7440-50-8)	
Not rapidly degradable	
Persistence and degradability	Biodegradability in soil: not applicable. Biodegradability: not applicable.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable
zinc (7440-66-6)	
Not rapidly degradable	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)

### 12.3. Bioaccumulative potential

DX-Cartridge	
Bioaccumulative potential	Not established.
glycerol trinitrate (55-63-0)	
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).
diphenylamine (122-39-4)	
BCF - Fish [1]	51 – 253 (Cyprinus carpio, Literature study, Test duration: 8 weeks)
Partition coefficient n-octanol/water (Log Kow)	3.71 – 3.84 (Weight of evidence approach, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 20.2 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
barium nitrate (10022-31-8)	
Bioaccumulative potential	Not bioaccumulative.
copper (7440-50-8)	
Bioaccumulative potential	Bioaccumulation: not applicable.
zinc (7440-66-6)	
BCF - Fish [1]	0.002 (40 day(s), Danio rerio, Semi-static system, Fresh water, Read-across)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

### 12.4. Mobility in soil

DX-Cartridge	
Mobility in soil	No additional information available

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glycerol trinitrate (55-63-0)	
Ecology - soil	Low potential for adsorption in soil.
diphenylamine (122-39-4)	
Surface tension	71.8 mN/m (20 °C, 90 %, EU Method A.5: Surface tension)
Partition coefficient n-octanol/water (Log Koc)	2.818 – 2.917 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
Ecology - soil	Low potential for adsorption in soil. May be harmful to plant growth, blooming and fruit formation.
barium nitrate (10022-31-8)	
Surface tension	No data available in the literature
Ecology - soil	Adsorption to soil is possible.
copper (7440-50-8)	
Ecology - soil	Adsorbs into the soil.
zinc (7440-66-6)	
Surface tension	No data available in the literature
Ecology - soil	Adsorbs into the soil.

### 12.5. Other adverse effects

Ozone	Not classified
Other adverse effects	No additional information available
Other information	Avoid release to the environment.

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

Product/Packaging disposal recommendations	Dispose in a safe manner in accordance with local/national regulations. Refer to manufacturer/supplier for information on recovery/recycling.
Ecology - waste materials	Avoid release to the environment.
Additional information	Cartridge strips with unused cartridges: Hazardous waste due to risk of explosion. European waste catalogue: 16 04 01* - waste ammunition. If possible use up the cartridges or store them for your next project. If not possible to use up the cartridges - The strip is mixed municipal waste and the cartridge itself is "waste ammunition" and has to be disposed of by an authorized/certified company. If cartridges are used up: European waste catalogue: 20 03 01 - mixed municipal waste . The product (cartridges and strip) can be disposed of as household or factory waste.

## SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / RID

ADR	IMDG	IATA	RID
<b>14.1. UN number or ID number</b>			
UN 0323	UN 0323	UN 0323	UN 0323
<b>14.2. UN proper shipping name</b>			
CARTRIDGES, POWER DEVICE	CARTRIDGES, POWER DEVICE	Cartridges, power device	CARTRIDGES, POWER DEVICE
Transport document description			
UN 0323 CARTRIDGES, POWER DEVICE, 1.4S, (E)	UN 0323 CARTRIDGES, POWER DEVICE, 1.4S	UN 0323 Cartridges, power device, 1.4S	UN 0323 CARTRIDGES, POWER DEVICE, 1.4S
<b>14.3. Transport hazard class(es)</b>			
1.4S	1.4S	1.4S	1.4S

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ADR	IMDG	IATA	RID
<b>14.4. Packing group</b>			
Not applicable	Not applicable	Not applicable	Not applicable
<b>14.5. Environmental hazards</b>			
Dangerous for the environment: No	Dangerous for the environment: No Marine pollutant: No	Dangerous for the environment: No	Dangerous for the environment: No
No supplementary information available			

### 14.6. Special precautions for user

#### Overland transport

Classification code (ADR)	1.4S
Special provisions (ADR)	347
Limited quantities (ADR)	0
Packing instructions (ADR)	P134, LP102
Mixed packing provisions (ADR)	MP23
Transport category (ADR)	4
Tunnel restriction code (ADR)	E

#### Transport by sea

Special provisions (IMDG)	347
Limited quantities (IMDG)	0
Packing instructions (IMDG)	P134, LP102
EmS-No. (Fire)	F-B
EmS-No. (Spillage)	S-X
Stowage category (IMDG)	01
Stowage and handling (IMDG)	SW1
MFAG-No	114

#### Air transport

PCA packing instructions (IATA)	134
PCA max net quantity (IATA)	25kg
CAO packing instructions (IATA)	134
Special provisions (IATA)	A165

#### Rail transport

Special provisions (RID)	347
Limited quantities (RID)	0
Packing instructions (RID)	P134, LP102

### 14.7. Maritime transport in bulk according to IMO instruments

Not applicable

## SECTION 15: Regulatory information

### 15.1. Safety, health and environmental regulations specific for the product in question

No additional information available

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### SECTION 16: Other information

SDS Major/Minor	None
Issue date	20/10/2021
Revision date	20/10/2021
Supersedes	12/04/2017

Section	Changed item	Change	Comments
2.2	Precautionary statements (GHS UN)	Modified	
3	Composition/information on ingredients	Modified	

#### Abbreviations and acronyms

- ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
- ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road
- ATE - Acute Toxicity Estimate
- BCF - Bioconcentration factor
- CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
- DMEL - Derived Minimal Effect level
- DNEL - Derived-No Effect Level
- EC50 - Median effective concentration
- IARC - International Agency for Research on Cancer
- IATA - International Air Transport Association
- IMDG - International Maritime Dangerous Goods
- LC50 - Median lethal concentration
- LD50 - Median lethal dose
- LOAEL - Lowest Observed Adverse Effect Level
- NOAEC - No-Observed Adverse Effect Concentration
- NOAEL - No-Observed Adverse Effect Level
- NOEC - No-Observed Effect Concentration
- OECD - Organisation for Economic Co-operation and Development
- PBT - Persistent Bioaccumulative Toxic
- PNEC - Predicted No-Effect Concentration
- REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
- RID - Regulations concerning the International Carriage of Dangerous Goods by Rail
- SDS - Safety Data Sheet
- vPvB - Very Persistent and Very Bioaccumulative

Full text of H-statements:	
H200	Unstable explosives
H201	Explosive; mass explosion hazard
H204	Fire or projection hazard
H300	Fatal if swallowed
H301	Toxic if swallowed
H302	Harmful if swallowed
H310	Fatal in contact with skin



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H311	Toxic in contact with skin
H319	Causes serious eye irritation
H330	Fatal if inhaled
H331	Toxic if inhaled
H332	Harmful if inhaled
H360	May damage fertility or the unborn child
H373	May cause damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H401	Toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H411	Toxic to aquatic life with long lasting effects
H412	Harmful to aquatic life with long lasting effects

SDS\_UN\_Hilti

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*

Attn. : To whom it may concern

Date : 26 September 2023  
Ref. : 087/FP/DY/23

Subject : Country of Origin- Hilti Ceiling clip X-CC

Dear Sir / Madam,

Enclosed please find the information of Hilti Ceiling clip X-CC

Brand Name : Hilti

Model Name : Hilti Ceiling clip X-CC

Manufacturer : Hilti Corporation

Address of Manufacturer : FL-9494, Principality of Liechtenstein.

Manufacturer Contact Person : Dennis Yeung

Supplier : Hilti (Hong Kong) Ltd

Address of Supplier : 701-704, 7/F, Tower A, Manulife Financial Centre,  
223 Wai Yip Street, Kwun Tong, Kowloon, Hong Kong

Supplier Contact Person : Dennis Yeung (+852 9723 4621)

Country of Origin : Austria

Should you have further questions, please do not hesitate to contact our Technical Representatives, Customer Service Hotline at 8228-8118, or email us at [hksales@hilti.com](mailto:hksales@hilti.com).

Yours faithfully,



Dennis Yeung  
Head of Product Leadership Strategy, F&P

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## Hilti X-CC U Ceiling Clip with Nail Job Reference

Year	Project Name	Customer Name	Project type
2022	IMMIGRATION HEADQUARTERS, TKO	CORNWALL ELECTRICAL ENGINEERING	Office
2022	98 HOW MING ST	KIT YEE ENGINEERING CO., LIMITED	Office
2022	LUNG CHEUNG RD, NKIL 6579	GAMMON ENGINEERING & CONSTRUCTION	Residential
2022	TKO LOHAS PARK PH11 (SITE C2)	GAMMON ENGINEERING & CONSTRUCTION	Residential
2022	KWONG WAH HOSPITAL PH2 - (IPS)	FU TAT E&M ENGINEERING (HK)	Health
2022	SHEK WU HUI EFFLUENT POLISHING PLANT	CHUBB HONG KONG LIMITED	Utilities
2022	YAU MA TEI- KWONG WAH HOSPITAL PHASE 1	WEN CHI E&M ENGINEERING CO LTD	Health
2022	HO MAN TIN STATION RES (PACKAGE 2)	GAMMON ENGINEERING & CONSTRUCTION	Residential
2022	TAIKOO PLACE PH 2B	REGENT ENGINEERING (HK) LIMITED	Office
2022	TUEN MUN HOSPITAL EXT	WING YIP BUILDING MATERIALS	Health
2022	6-8 LAI YING ST, NKIL 6549	CHINA OVERSEAS BUILDING	Residential
2023	WAN CHAI HOPEWELL CENTRE 2	LISTO ENTERPRISES COMPANY LIMITED	Hospitality
2023	HO MAN TIN STATION RES (PACKAGE 2)	GAMMON ENGINEERING & CONSTRUCTION	Residential
2023	UNITED CHRISTIAN HOSPITAL	CHEUNG HO ELECTRIC CO., LIMITED	Health
2023	TKO LOHAS PARK PH11 (SITE C2)	GAMMON ENGINEERING & CONSTRUCTION	Residential
2023	FORMER EXCELSIOR REDEVELOP - PROJECT BLUE	GAMMON ENGINEERING & CONSTRUCTION	Office
2023	LUNG CHEUNG RD, NKIL 6579	GAMMON ENGINEERING & CONSTRUCTION	Residential
2023	24-38 TONKIN ST & 240-244 FUK WING ST, NKIL 6627	GAMMON ENGINEERING & CONSTRUCTION	Residential
2023	IMMIGRATION HEADQUARTERS, TKO	SAN WO COMPANY	Office
2023	NKIL 6602 (OPPOSITE TO KO CHIU RD/KO CHEUNG F	GAMMON ENGINEERING & CONSTRUCTION	Residential
2023	HKU POKFIELD RD (PH1 & 2) - ACADEMIC BLDG, SPC	WING YIP BUILDING MATERIALS	Hospitality
2024	FORMER EXCELSIOR REDEVELOP - PROJECT BLUE	CHONG SHI ENGINEERING CO	Office
2024	CYBERPORT PH5	GAMMON CONSTRUCTION LIMITED	Office
2024	UNITED CHRISTIAN HOSPITAL	CHONG SUN E&M ENGINEERING CO LTD	Health
2024	TKO GOVERNMENT OFFICES	TOPONE ENGINEERING SERVICE CO LTD	Office
2024	KAI TAK INLAND REVENUE TOWER	GAMMON CONSTRUCTION LIMITED	Office
2024	TKO LOHAS PARK PH11 (SITE C2)	GAMMON ENGINEERING & CONSTRUCTION	Residential
2024	TMCLK C4 NORTH CONNECT TUNNEL BLDGS	SIMPLESTAR ENGINEERING LIMITED	Office