




Defects in cable tray materials





Defects in cable tray materials

	<p>This guide examines five of the most frequently observed cable tray installation defects, provides code-compliant prevention measures, and offers practical checkpoints for quality control.</p>
---	---

	<p>For engineers, contractors and facility managers, understanding common problems in steel cable tray installations – and knowing how to avoid them – is essential for ensuring system ...</p>
---	---

	<p>Cable trays of inferior quality are often associated with hidden costs that vastly exceed the initial price of the trays. Early failures require labor to replace, result in production downtime, and ...</p>
--	--

	<p>Learn about common cable tray failures, their causes, and practical solutions for ensuring the longevity and safety of your cable tray system, including corrosion, cracks, and grounding issues, ...</p>
---	--

	<p>This guide examines five of the most frequently observed cable tray installation defects, provides code-compliant prevention measures, and offers ...</p>
---	--



When fitting cable trays and their accessories, the products are cut on site to create changes of direction, adjust sections, etc. Damage can also occur during handling; as a result, both the ...



However, like any other infrastructure, cable trays are prone to failures that can result in serious safety hazards, financial losses, and downtime. In this article, we will discuss the two basic ...



This quality assurance plan outlines the inspection process for cable trays. It details the raw materials, components, and characteristics that will be checked at various stages of production.



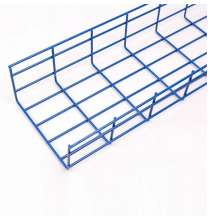
Discover common cable management problems and how cable tray accessories effectively solve them to ensure safety and performance.



Cable trays of inferior quality are often associated with hidden costs that vastly exceed the initial price of the trays. Early ...



For engineers, contractors and facility managers, understanding common problems in steel cable tray installations – and knowing how to avoid ...



In designing supports for a cable tray system, consideration should be given to the loads associated with future cable additions and any additional loading that may be applied to the cable tray system (e.g., ...



Here we introduce various types of faults that may occur in cable trays and their solutions in details, hoping we can help you in some way.

Types of Cable Tray Failures Preventing Cable Tray Failures Conclusion Don't Leave empty-handed! Cable tray failures can be broadly classified into two types: mechanical failures and electrical failures. See more on electrical4uonline

```

#b_results
.b_vidAns{border-radius:6px;box-shadow:0 0 0 1px rgba(0,0,0,.05);padding:16px
20px;gap:10px;background:#fff}@charset "UTF-8";#b_results .b_ans.b_vidAns{box-
shadow:none!important;padding:var(--smtc-gap-between-content-medium) 0!importa
nt;background:var(--bing-smtc-background-ctrl-fade-on-image-stop-0)}#b_results
#serpvidans.vsacf .mc_vtvc,#b_results #serpvidans.vsacf .mc_vtvc_th,#b_results
#serpvidans.vsacf .cico,#b_results #serpvidans.vsacf .mc_vtvc_htb,#b_results
#serpvidans.vsacf .vrhc,#b_results #serpvidans.vsacf .vrhcp,#b_results
#serpvidans.vsacf .vrhtc,#b_results #serpvidans.vsacf .vrhtpc{border-
radius:var(--mai-smtc-corner-card-default)}#b_results #serpvidans.vsacf .mmlist
.mc_vtvc,#b_results #serpvidans.vsacf .mmlist .mc_vtvc
.mc_vtvc_meta{margin:0}#b_results #serpvidans.vsacf .mmlist .mc_vtvc
.mc_vtvc_meta .mc_vtvc_meta_channel,#b_results #serpvidans.vsacf .mmlist
.mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_row_channel{color:var(--smtc-foreground-
content-neutral-primary)}#serpvidans.vsacf,#serpvidans.vsacf .expctn
.expbody,#serpvidans.vsacf .mmlist{display:flex;flex-direction:column;gap:var(--smtc-
gap-between-content-medium)}#serpvidans.vsacf
.cico{height:auto}#serpvidans.vsacf
.mc_vtvc_ban_lo{top:0;right:auto}#serpvidans.vsacf .mc_cwvc .mc_vtvc
.mc_vtvc_meta,#serpvidans.vsacf .mmlist .mc_vtvc
.mc_vtvc_meta{height:auto;padding:var(--smtc-gap-between-content-xx-small) 0
var(--smtc-gap-between-content-xx-small) var(--smtc-gap-between-content-medium);
display:flex;flex-direction:column;justify-content:space-between}#serpvidans.vsacf
.mc_cwvc .mc_vtvc .mc_vtvc_meta .mc_vtvc_title,#serpvidans.vsacf .mmlist .mc_vtvc
.mc_vtvc_meta .mc_vtvc_title{color:var(--smtc-ctrl-link-foreground-brand-rest);font:va
r(--bing-smtc-text-global-body2);height:auto;display:-webkit-box;-webkit-line-
clamp:2;-webkit-box-orient:vertical}#serpvidans.vsacf .mc_cwvc .mc_vtvc
.mc_vtvc_meta .mc_vtvc_meta_block_area,#serpvidans.vsacf .mc_cwvc .mc_vtvc
.mc_vtvc_meta .mc_vtvc_meta_block,#serpvidans.vsacf .mmlist .mc_vtvc
.mc_vtvc_meta .mc_vtvc_meta_block_area,#serpvidans.vsacf .mmlist .mc_vtvc
.mc_vtvc_meta .mc_vtvc_meta_block{display:flex;flex-
direction:column;gap:var(--smtc-padding-ctrl-text-side)}#serpvidans.vsacf .mc_cwvc
.mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_block_area
.mc_vtvc_meta_row,#serpvidans.vsacf .mc_cwvc .mc_vtvc .mc_vtvc_meta
.mc_vtvc_meta_block .mc_vtvc_meta_row,#serpvidans.vsacf .mmlist .mc_vtvc
.mc_vtvc_meta .mc_vtvc_meta_block_area .mc_vtvc_meta_row,#serpvidans.vsacf
.mmlist .mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_block .mc_vtvc_meta_row{color:var(
--smtc-foreground-content-neutral-primary);height:var(--mai-smtc-padding-card-
default);font:var(--bing-smtc-text-global-caption1)}#serpvidans.vsacf .mc_cwvc
.mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_block_area .mc_vtvc_meta_row
.mc_vtvc_meta_row_channel::before,#serpvidans.vsacf .mc_cwvc .mc_vtvc
.mc_vtvc_meta .mc_vtvc_meta_block .mc_vtvc_meta_row
.mc_vtvc_meta_row_channel::before,#serpvidans.vsacf .mmlist .mc_vtvc
.mc_vtvc_meta .mc_vtvc_meta_block_area .mc_vtvc_meta_row
.mc_vtvc_meta_row_channel::before,#serpvidans.vsacf .mmlist .mc_vtvc

```

```

.mc_vtvc_meta .mc_vtvc_meta_block .mc_vtvc_meta_row
.mc_vtvc_meta_row_channel::before{content:" · "}#serpvidans.vsacf .mc_cwvc
.mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_block_area
.mc_vtvc_meta_pubdate,#serpvidans.vsacf .mc_cwvc .mc_vtvc .mc_vtvc_meta
.mc_vtvc_meta_block .mc_vtvc_meta_pubdate,#serpvidans.vsacf .mmlist .mc_vtvc
.mc_vtvc_meta .mc_vtvc_meta_block_area
.mc_vtvc_meta_pubdate,#serpvidans.vsacf .mmlist .mc_vtvc .mc_vtvc_meta
.mc_vtvc_meta_block .mc_vtvc_meta_pubdate{color:var(--bing-smtc-foreground-
content-neutral-tertiary);padding-bottom:0}.vsacf .mc_cwvc .mc_vtvc_con_rc,.vsacf
.mmlist .mc_vtvc_con_rc{display:flex}.vsacf .mc_cwvc .mc_vtvc_con_rc
.mc_vtvc_meta_w,.vsacf .mmlist .mc_vtvc_con_rc
.mc_vtvc_meta_w{height:auto}#serpvidans.vsacf.vsasa .vsb_tr_c
.vsb_tr_t,#serpvidans.vsacf:not(.vsasa) .b_title{display:none}#serpvidans.vsacf:not(
vsasa)>.b_title:first-child,#serpvidans.vsacf:not(.vsasa) .expbody>.b_title:first-child,
#serpvidans.vsacf:not(.vsasa)>#ans_ss_dlg+.b_title,#serpvidans.vsacf:not(.vsasa)
.expbody>#ans_ss_dlg+.b_title{display:block}.vsacf .b_title{padding-left:0}.vsacf
.b_title .mmtitle{font:var(--bing-smtc-text-global-subtitle1-strong);margin-
bottom:0}.vsacf .b_title .mmtitle a::after{content:"";margin:5px 5px 0 0;border-
top:2px solid var(--smtc-foreground-content-neutral-primary);border-right:2px solid
var(--smtc-foreground-content-neutral-primary);background-size:7px 7px;width:7px;h
eight:7px;transform:rotate(45deg);display:inline-block;margin-
left:4px}#serpvidans.vsacf .b_title .mmtitle{margin-bottom:0}#serpvidans.vsacf
.b_title .mmtitle a{color:var(--smtc-foreground-content-neutral-
primary)}#serpvidans.vsacf .cardless.mmlist .mc_vtvc_con_rc,#serpvidans.vsacf
.cardless.mmlist .mc_vtvc_th{height:auto}#serpvidans.vsacf
.vsb_tr_c.va_tt{margin:0}#serpvidans.vsacf .vtbc .mv_vtvc_play,#serpvidans.vsacf
.vtbc .mv_vtvc_play_ext{position:static}#serpvidans.vsacf .va_tt
.mc_vtvc_ban_lo{display:block}#serpvidans.vsacf .mc_bc{width:auto;border-
radius:var(--smtc-ctrl-badge-sm-corner);padding:var(--smtc-padding-ctrl-text-side)
var(--smtc-gap-between-content-xx-small)}#serpvidans.vsacf .rmts .mc_bc
ems{display:none}#serpvidans.vsacf a.vsb_tr_t{color:var(--smtc-foreground-content-
neutral-primary)}.vsacf .va_tt .vsb_tr_chd
.mc_vtvc_th_dock.rmoverlay{height:36px}.vsacf .va_tt .vsb_tr_chd .mc_vtvc_th_dock
{height:92px;position:absolute;bottom:0;background:linear-
gradient(180deg,var(--bing-smtc-background-ctrl-fade-on-image-stop-0) 0%,var(--mai-
smtc-background-ctrl-on-image-rest) 100%)}vsacf .va_tt a.vsb_tr_t{padding:0
0;font:var(--bing-smtc-text-global-body-2-alt-strong)}.vsacf .va_tt .vsb_tr_chd
.mc_vtvc .mc_vtvc_meta,.vsacf .va_tt .vsb_tr_chd .mc_vtvc
.mc_vtvc_title{color:var(--mai-smtc-foreground-ctrl-on-image-rest)}.vsacf span.vcmt_
ctt{font:var(--bing-smtc-text-global-caption2);margin:var(--smtc-gap-between-
content-xx-small) 0 0;height:16px}#serpvidans.vsacf .vsb_tr_chd .mc_vtvc_tot
.mc_vtvc_title strong{font-size:14px;line-
height:20px;display:unset}#serpvidans.vsacf .va_tt .b_sldrp .slide:not(:first-
child){margin-left:var(--smtc-gap-between-content-small)}#serpvidans.vsacf .va_tt
.vsb_tr_chd .mc_vtvc .mc_vtvc_title{white-space:normal;display:-webkit-box;-webkit-
line-clamp:2;-webkit-box-orient:vertical}.vsacf .b_title:not(:first-child):has(+div)
.mmtitle{font:var(--bing-smtc-text-global-body-2-alt-strong)}#serpvidans.vsacf

```

```

.revqpm+.va_tt .mm_vrc{padding-top:0}#serpvidans .va_tt .slide,#serpvidans
.mc_vtvc_th,#serpvidans .mc_vtvc_th .cico{border-radius:var(--mai-smtc-corner-card-
default)!important}#serpvidans.vsacf .b_module_expansion_control .b_btnContainer .
b_CompactExpansion{background-color:var(--bing-smtc-background-ctrl-neutral-rest)
;display:flex;justify-content:center;align-items:center;gap:4px;width:fit-
content;height:auto;padding:8px 12px}#serpvidans.vsacf
.b_module_expansion_control .b_btnContainer .b_CompactExpansion .b_CompactExpa
nsionBtnText{font:var(--bing-smtc-text-global-caption1-strong);color:var(--bing-smtc-
foreground-content-brand-rest)}#serpvidans.vsacf .b_module_expansion_control
.b_btnContainer .b_CompactExpansion
.b_arrow{display:flex;margin:0;height:auto}#serpvidans.vsacf
.b_module_expansion_control .b_btnContainer .b_CompactExpansion .b_arrow
path#Shape{fill:var(--bing-smtc-foreground-content-brand-rest)}#serpvidans.vsacf
.b_module_expansion_control .b_btnContainer::after{content:"";position:absolute;wid
th:100%;bottom:20px;left:0;height:1px;border-radius:1px;background:var(--smtc-
stroke-ctrl-on-neutral-rest)}#b_results .b_ans.b_vidAns{box-
shadow:none;padding:12px 20px 0}#b_results .b_ans.b_vidAns
.vasac{padding:unset;margin:0}#b_results .b_ans.b_vidAns .vsa
.b_attribution{padding-bottom:0}#b_results .b_ans.b_vidAns .cardless
.salink{margin:0}#b_results .b_ans.b_vidAns .mmlist .mc_vtvc{margin-
top:10px}#b_results .b_ans.b_vidAns .mmlist .mc_vtvc .mc_vtvc_meta{display:flex;fl
ex-direction:column;justify-content:space-between;margin:0 10px 4px
12px}#b_results .b_ans.b_vidAns .mmlist .mc_vtvc .mc_vtvc_meta
.mc_vtvc_meta_channel{color:#111}#b_results .b_ans.b_vidAns .mmlist .mc_vtvc
.mc_vtvc_meta .mc_vtvc_meta_row_channel,#b_results .b_ans.b_vidAns .mmlist
.mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_block_area{color:#666}#b_results
.b_ans.b_vidAns .mmlist .mc_vtvc .mc_vtvc_meta
.mc_vtvc_meta_block_area{bottom:0;height:unset}.b_dark .vsa.cardless .mc_vtvc{ba
ckground-color:unset}.mmtitle>a{display:block}.mc_fh{height:100%;border-
radius:6px}.mc_tc_bs{overflow:hidden}.mmlist .mc_vtvc .mc_vtvc_meta { padding:
12px 16px 16px 16px; } .mmlist .mc_vtvc .mc_vtvc_meta_w { height: 112px; margin-
top: -0px; } .mmlist .mc_vtvc .mc_vtvc_title { height: 44px; line-height: 22px; margin-
bottom: 0px; margin-top: 0px; } .mmlist .mc_vtvc .mc_vtvc_meta_block_area {
height: 40px; } .mmlist .mc_vtvc .vtmu, .mmlist .mc_vtvc .vtpl { bottom: 120px; }
.mmlist .mc_vtvc_th_dock { height: 112px; } .mmlist .mc_vtvc_th .cico { height:
131px; } .mc_vtvc{background-color:var(--smtc-background-card-on-primary-default-
rest);line-height:0;margin:0;position:relative;border-radius:6px;overflow:hidden}.mc_
vtvc.noshadow{box-shadow:none}.mc_vtvc_con_rc{border-radius:6px;overflow:hidde
n;position:relative}.mc_vtvc>a{color:#71777d;display:block;text-
decoration:none;width:100%}.mc_vtvc>a:focus-visible::after{outline:2px solid var(--s
mtc-ctrl-focus-outer-stroke);width:100%;height:100%;content:"";outline-offset:-2px;po
sition:absolute;top:0;left:0}.mc_vtvc_th{background-
color:#d5d5d5;position:relative}.mc_vtvc_th .cico{border-radius:0}.mc_vtvc_ban_lo,.
mc_vtvc_ban_up{position:absolute;vertical-align:middle}.mc_vtvc_ban_lo{bottom:0}.
mc_vtvc_ban_up{top:0}.mc_vtvc_title{font-weight:normal;margin-bottom:11px;overfl
ow:hidden;color:#111;height:calc(3*18px);line-height:18px}.mc_vtvc_title
a{display:inline-block;color:#111}.mc_vtvc_title a:hover{text-decoration:underline}.

```

```

mc_vtvc_src_ico{float:left;margin-right:4px}.mc_vtvc_act{height:16px;margin-
top:-40px;padding:12px 8px;z-index:1}.mc_vtvc_actc{right:16px;bottom:16px;positio
n:absolute;display:inline-block;z-index:1}.mc_vtvc_act_sep{border-top:1px solid
#d5d5d5;height:40px;margin:0 8px}.mc_vtvc_fh .mc_vtvc_act_sep,.mc_vtvc_fh
.mc_vtvc_act{visibility:hidden}#serpvidans .b_topTitle{margin-bottom:8px}.mc_vtvc
_htc{width:100%;height:100%;position:absolute;top:0;bottom:0;left:0;right:0}.mc_vt
vc_htb{width:100%;height:100%;background:rgba(0,0,0,.7);position:absolute;top:0;b
ottom:0;left:0;right:0}.mc_vtvc_ht{width:100%;padding:0 16px;line-height:16px;colo
r:#fff;text-decoration:underline;word-break:break-word;box-sizing:border-box;vertical
-align:middle;text-align:center}.mc-vtvc_th_live_b{background-
color:#c80000;color:#fff;display:inline-block;padding:2px 8px;font:11px/14px Arial;b
order-radius:2px;text-transform:uppercase;height:15px;width:26px;position:absolute;
left:8px;top:110px}.isvctrl.isv .mc_vtvc_ban_up{left:0;right:initial}.mc_vtvc_ban_lo,.
mc_vtvc_ban_up{right:0}.vt_text.b_lRight .b_lLeft{margin:0 0 0 1px;height:14px;line-
height:14px;padding:2px 8px;background:rgba(0,0,0,.75);border-radius:2px;font-weig
ht:bold}.mc_vthtb{width:100%;height:100%;background:rgba(0,0,0,.7);position:absol
ute;top:0;bottom:0;left:0;right:0;display:table}.mc_vtht{width:100%;padding:0 16px;l
ine-height:16px;color:#fff;text-decoration:underline;word-break:break-word;box-sizin
g:border-box;vertical-align:middle;text-align:center;display:table-
cell}.vt_text.b_lRight .b_lLeft{margin:0 0 0 1px;height:14px;line-
height:14px;padding:2px 8px;background:rgba(0,0,0,.75);border-radius:2px;font-weig
ht:bold}.emptyStyleForDebuggingPurpose{top:0}.emptyStyleForDebuggingPurpose{
top:0}.mc_vtvc_center_play{width:32px;height:32px;background-size:contain;positio
n:absolute;margin:auto;bottom:0;top:0;left:0;right:0;box-shadow:none;border-radius:
0}.mc_vtvc_center_play.rmvbg{width:32px;height:32px;background-
image:none}.mc_vtvc_htb,.mc_vtvc_ht{display:none}.vt_onhv
.mc_vtvc_htb{display:table}.vt_onhv .mc_vtvc_ht{display:table-
cell}.mc_vtvc_center_play{display:inline-block}.vt_onhv
.mc_vtvc_center_play{display:none}.mc_vtvc .vtmu,.mc_vtvc
.vtpl{bottom:163px}.vsarf .mc_vtvc .vtmu,.vsarf .mc_vtvc .vtpl{bottom:122px}.svarh
#mmcar .mc_vtvc .vtmu,.svarh #mmcar .mc_vtvc .vtpl{bottom:137px}.svarht
#mmcar .mc_vtvc .vtmu,.svarht #mmcar .mc_vtvc .vtpl{top:8px;left:8px}.mc_vtvc_c
enter_play{background-image:url(data:image/svg+xml,%3Csvg%20width%3D%2232
%22%20height%3D%2232%22%20viewBox%3D%220%200%2032%2032%22%20fill
%3D%22none%22%20xmlns%3D%22http%3A%2F%2F%2F2000%2Fsvg%22%3E%0D
%0A%20%20%20%20%3Crect%20width%3D%2232%22%20height%3D%2232%22%
20rx%3D%2216%22%20fill%3D%22black%22%20fill-opacity%3D%220.6%22%2F%3
E%0D%0A%20%20%20%20%3Cpath%20d%3D%22M14.2354%2010.1923C13.2355%
209.62986%2012%2010.3524%2012%2011.4997V20.5C12%2021.6472%2013.2355
%2022.3698%2014.2354%2021.8073L22.2356%2017.3073C23.2551%2016.7339%2
023.2551%2015.2661%2022.2357%2014.6926L14.2354%2010.1923Z%22%20fill%3
D%22white%22%20fill-
opacity%3D%220.9%22%2F%3E%0D%0A%3C%2Fsvg%3E)}}.mmlist
.mc_vtvc{margin:10px 1px 0}.mmlist .mc_vtvc_con_rc{display:flex}.cardless .mmlist
.mc_vtvc_con_rc{height:112px}.mmlist .mc_vtvc .mc_vtvc_meta{display:flex;flex-
direction:column;justify-content:space-between;margin:0 10px 4px
12px;padding:0}.mmlist .mc_vtvc_title{font-weight:400;font-size:16px;height:44px;li

```

```

ne-height:22px;margin-bottom:0;margin-top:0;color:unset}.mmlist
.mc_vtvc_meta_row{font-size:13px}.mmlist .mc_vtvc
.mc_vtvc_meta_block_area{height:unset}.mmlist .mc_vtvc .vtmu,.mmlist .mc_vtvc
.vtpl{bottom:8px}.cardless .mmlist .mc_vtvc{box-shadow:none}.cardless.mmlist
.mc_vtvc_center_play{width:32px;height:32px}.cardless.mmlist .mc_vtvc_title{font-
size:16px;color:unset}.cardless.mmlist .mc_vtvc_meta_row{line-
height:20px}.cardless.mmlist .mc_vtvc_meta_pubdate{padding-
bottom:2px;color:#666}.cardless.mmlist .mc_vtvc_th,.cardless.mmlist .mc_vtvc_th
.cico,.cardless.mmlist .mc_vtvc_th div.rms_img{border-radius:6px}.cardless.mmlist
.mc_vtvc_th{height:111px}.cardless.mmlist .mc_vtvc_htc{border-radius:6px;overflow
:hidden}#serpvidans.vasac.cardless{box-shadow:none}.cardless.mmlist
.mc_bc{padding:2px 8px;line-height:14px;border-radius:2px;font-
weight:normal}.mmlist .mc_vtvc: hover .mc_vtvc_title{text-decoration:underline}.mc_
vtvc_meta{box-sizing:border-box;display:inline-block;line-height:18px;position:relativ
e;width:100%}.mc_vtvc_meta_block{bottom:0;position:absolute;width:100%}.mc_vtvc
c_meta_row{line-height:16px;font-size:11px;height:17px;overflow:hidden;text-
overflow:ellipsis;white-space:nowrap}.mc_vtvc_meta_row a{display:inline-
block}.mc_vtvc_meta_row a: hover{text-decoration:underline}.mc_vtvc_meta_block_a
rea{position:relative}.mc_vtvc_meta_block,.mc_vtvc_meta_block
a{color:#444}.b_dark .mc_vtvc_meta_block{color:#edebe9}.mc_vtvc_meta_row>:nt
h-of-type(n+2)::before{content:" · "}.mc_vtvc_meta_row
.mc_vtvc_meta_row_channel::before{content:" > "}.mc_vtvc_kmt_title{line-height:18px;
padding-bottom:4px;font-weight:bold;color:#00809d;text-transform:uppercase;font-
size:11px}.mc_vtvc_kmt,.mc_vtvc_con_rc.onhov .wkmt
.mc_vtvc_meta_row,.mc_vtvc_con_rc.onhov .wkmt
.tibc_tt{display:none}.mc_vtvc_con_rc.onhov .wkmt .mc_vtvc_title{max-
height:18px;margin-bottom:18px;overflow:hidden}.mc_vtvc_con_rc.onhov.mmsts
.mc_vtvc_title{visibility:hidden}.mc_vtvc_con_rc.onhov
.mc_vtvc_kmt{display:block}.mc_vtvc_kmt_content .b_factrow{line-height:17px;font-
size:11px;max-height:34px;overflow:hidden;text-overflow:ellipsis;padding:0 16px 0
0;color:#444}.mc_vtvc_meta .mc_vtvc_kmt_title{line-height:18px}.mc_vtvc_title:hov
er{text-decoration:none}.mc_vtvc_meta_pubdate{color:#444;padding-bottom:3px}.
mc_vtvc_meta_channel{color:#444}.mc_vtvc_meta_w,.mc_vplvc_meta_w{position:re
lative}.mc_vtvc_meta_bg_w,.mc_vplvc_meta_bg_w{height:100%;width:100%;overflo
w:hidden;position:absolute;top:0}.mc_vtvc_meta_bg_w .cico,.mc_vplvc_meta_bg_w
.cico{border-radius:0;overflow:visible}.dg_u .mm_vidch_th_c{overflow:visible}.dg_u
.mm_vidch_th_bg img{margin-
top:-20px}.emptyStyleForDebuggingPurpose{top:0}.mc_vtvc_meta_w
.mc_vtvc_meta{background:rgba(255,255,255,.75)}.mc_vtvc_meta_bg_w
img,.mc_vtvc_meta_bg_w .mc_vtvc_cb_w{filter:blur(25px);transform:scale(1.2)}body
{--video-metadata-channel-color:#3c3c3c}body.b_dark{--video-metadata-channel-
color:unset}.vsarf .mc_vtvc_meta_pubdate{color:unset}.vsarf
.mc_vtvc_meta_channel{color:var(--video-metadata-channel-color)}.vsarf .mc_vtvc
.mc_vtvc_meta_w .mc_vtvc_title,.vsarf .mc_vtvc .mc_vtvc_meta_w .mc_vtvc_title
strong{font-weight:bold}.vsarf .mc_vtvc_meta_w .mc_vtvc_meta_row{font-
size:13px}.emptyStyleForDebuggingPurpose{top:0}.vsarf .mc_vtvc_th .cico{height:1
32px}.emptyStyleForDebuggingPurpose{top:0}.emptyStyleForDebuggingPurpose{to

```

```

p:0}.emptyStyleForDebuggingPurpose{top:0}.emptyStyleForDebuggingPurpose{top:
0}.emptyStyleForDebuggingPurpose{top:0}.emptyStyleForDebuggingPurpose{top:0
}.emptyStyleForDebuggingPurpose{top:0}.vtbc .mv_vtvc_play{display:inline-block;p
osition:absolute;bottom:8px;left:9px;height:8px;width:7px;background:url(data:imag
e/png;base64,iVBORw0KGgoAAAANSUHEUgAAAACAAAAIBAMAAADHKvg1AAAAIVBMVE
X////////////////////////9/gMdvAAAACnRSTIMAETNEVWalmbvuo4D1oAAAAB9JR
EFUCB1jmMoABKuaQcSqQhCxKgFGgLnNQIkpQAwA8zkLyQAI6F0AAAAASUVORK5CYII=
)}.vtbc .mv_vtvc_play_ext{background:url(/rp/Lp38sn_04jegSK0IHxZVxyp-yKQ.png)
-172px -31px;display:inline-
block;height:8px;width:12px;position:absolute;bottom:8px;left:6px}.vtbc .pivot{heigh
t:20px;width:8px;min-width:8px}.mc_bc_w{height:18px;padding:8px;text-
align:right}.mc_bc{background-color:rgba(0,0,0,.75);padding:2px 8px;line-height:14p
x;color:#fff;display:inline-block;vertical-align:middle;border-radius:2px;font-
weight:bold}.mc_bc_w .pivot{text-align:center;margin-right:1px;height:14px}.vsarr
.mmgrid .mc_bc_w .mc_bc{background-color:rgba(0,0,0,.75);opacity:1}.mmsi{height
:16px;width:16px;position:relative;top:5px;padding-right:var(--smtc-gap-between-con
tent-xx-small)}.mmsi-microsoftnews,.mmsi-msn{top:3px}.vrhdata{display:none}.m
mgrid>div{width:197px;display:inline-block;margin-right:8px;margin-bottom:8px;box-
shadow:0 0 0 1px rgba(0,0,0,.05);position:relative;vertical-
align:top;overflow:hidden;white-space:normal;border-radius:6px}.vsarr
.mmgrid>div,.vsarr1stbig .mmgrid>div{margin-right:8px;margin-
bottom:8px}#serpvidansrr .mc_vtvc .mc_vtvc_meta{height:auto}#serpvidansrr
.mc_vtvc .mc_vtvc_title{display:-webkit-box;-webkit-line-clamp:2;-webkit-box-
orient:vertical}.mmgrid .mc_tc{border:0}.vsa .mmgrid>div:nth-child(3n){margin-
right:0}.vsa .b_moreLink{padding-top:4px}#serpvidansrr .mc_vtvc_meta_row{line-
height:18px;font-size:100%;height:17px}.vsarr .mmgrid>div:nth-child(2n){margin-
right:0}#serpvidansrr .mc_vtvc .vtmu,#serpvidansrr .mc_vtvc
.vtpl{bottom:128px}.vsarr1stbig .mmgrid>div:nth-child(2){margin-
right:0}#serpvidansrr.uipolish .mc_vtvc_meta_pubdate,#serpvidansrr.uipolish
.mc_vtvc_meta_channel,#serpvidansrr.uipolish #vidans2 .b_videocard
.video_metadata .video_source{color:#767676}#serpvidansrr #vidans2 .b_videocard
.video_metadata_container,#serpvidansrr #vidans2 .b_videocard
.video_metadata_container .video_metadata>h3{width:100%}@media(max-
width:1362.9px){#serpvidansrr
.mmgrid>div{width:168px;height:206px}#serpvidansrr .mmgrid>div
.cico,#serpvidansrr .mmgrid>div .cico
.rms_img{width:168px;height:100px}#serpvidansrr .mc_vtvc
.mc_vtvc_meta{padding:12px}#serpvidansrr .mc_vtvc
.mc_vtvc_title{height:32px;line-height:16px;margin-bottom:16px}#serpvidansrr
.mc_vtvc .mc_vtvc_meta_block_area{height:34px}#serpvidansrr
.mc_vtvc_meta_row{line-height:15px;font-size:13px;height:15px}#serpvidansrr
.mc_vtvc_meta_pubdate{padding-bottom:4px}#serpvidansrr .mc_vtvc
.vtmu,#serpvidansrr .mc_vtvc .vtpl{bottom:114px}#serpvidansrr #vidans2
.b_videocard .videoPlayer,#serpvidansrr #vidans2 .b_videocard .videoPlayer
.cico,#serpvidansrr #vidans2 .b_videocard .videoPlayer .cico .rms_img{width:343px!i
mportant;height:194px!important;margin-right:0}!important}@media(max-
width:1274.9px){#serpvidansrr

```

```

.mmgrid>div{width:124px;height:164px}#serpvidansrr .mmgrid>div
.cico,#serpvidansrr .mmgrid>div .cico
.rms_img{width:124px;height:76px}#serpvidansrr .mc_vtvc
.mc_vtvc_meta{padding:8px}#serpvidansrr .mc_vtvc .mc_vtvc_title{height:32px;line-
height:16px;margin-bottom:12px}#serpvidansrr .mc_vtvc
.mc_vtvc_meta_block_area{height:28px}#serpvidansrr .mc_vtvc_meta_row{line-
height:13px;font-size:11px;height:13px}#serpvidansrr
.mc_vtvc_meta_pubdate{padding-bottom:2px}#serpvidansrr .mc_vtvc
.vtmu,#serpvidansrr .mc_vtvc .vtpl{bottom:96px}#serpvidansrr #vidans2
.b_videocard .videoPlayer,#serpvidansrr #vidans2 .b_videocard .videoPlayer
.cico,#serpvidansrr #vidans2 .b_videocard .videoPlayer .cico .rms_img{width:256px!i
mportant;height:144px!important;margin-right:0}#serpvidansrr .maskthumb
.mc_bc_w{padding:8px 4px 4px 8px}#serpvidansrr.withsplitline .mmgrid>div:nth-
last-child(1),#serpvidansrr.withsplitline .mmgrid>div:nth-last-child(2){margin-
bottom:24px}#serpvidansrr.withsplitline .mmgrid{border-bottom:1px solid
#ecec; margin-bottom:16px}#serpvidansrr #vidans2 .b_videocard
.video_metadata{max-width:auto;padding:12px 16px}#serpvidansrr #vidans2
.b_videocard{margin-bottom:12px;box-shadow:0 0 1px rgba(0,0,0,.05),0 2px 3px
rgba(0,0,0,.1);border-radius:6px}#serpvidansrr .b_rich{padding-top:0}#serpvidansrr
#vidans2 .videoPlayer{border-radius:6px 6px 0 0;overflow:hidden}#serpvidansrr
#vidans2 .b_videocard .video_metadata>h3{white-space:nowrap;overflow:hidden;te
xt-overflow:ellipsis;-webkit-line-clamp:1;line-height:15px;height:15px;font-size:13px;c
olor:#000;margin-bottom:20px;font-family:var(--bing-smtc-text-style-default-regular-
font-family);font-style:normal;display:block}#serpvidansrr.vsarr1stbig #vidans2
.b_videocard .video_metadata .actionmenu{display:none}#serpvidansrr #vidans2
.b_videocard .video_summary,#serpvidansrr #vidans2 .b_videocard
.video_source{line-height:15px}#serpvidansrr #vidans2 .b_videocard .videoPlayer
.vtbc{right:0}.vrhc line.nhvpv .pffvi,.vrhc line.nhvpv[data-tps="S"] .pffvt,.vrhc
line.nhvpv[data-tps="M"] .pffvt,.vrhc line.nhvpv[data-tps="L"] .pffvt{display:inline-
flex}.vrhc line.nhvpv .vrhrc.pffv .vrhol{display:none}.vrhc line.nhvpv .vrhrc.pffv .play
er_ol{background:var(--mai-smtc-background-ctrl-on-image-
hover);transition:background-color .5s;display:flex;align-items:center;justify-content:c
enter;padding:var(--smtc-gap-between-content-x-small);gap:var(--smtc-gap-between-
content-x-small);box-sizing:border-box}.mc_vtvc_th img{transition:all var(--smtc-
duration-medium-01) var(--bing-smtc-animation-ease-default)}.nhvpv+.mc_vtvc_th i
mg{transform:scale(1.1)}.smtplayerhtml5{height:100%;width:100%;overflow:hidden
}.smtplayerhtml5 video{min-height:100%;min-width:100%}.smtplayerhtml5 .videopl
aying{background-color:#000}.smtplayerhtml5.hide{display:none}.pffvt{display:no
ne;color:var(--mai-smtc-foreground-ctrl-on-image-rest);font:var(--bing-smtc-text-
global-subtitle2-strong)}.pffvi{mask:url(/rp/ui07wU6K7FR_inzG7DRbP1i8fGo.svg)
center no-repeat;mask-size:12px;background:var(--bing-smtc-background-card-on-im
age-default);width:20px;height:20px;flex-shrink:0;align-self:flex-start}[data-tps="L"]
.pffvt{font:var(--bing-smtc-text-global-subtitle2-strong)}[data-tps="L"]
.pffvi{width:22px;height:22px;mask-size:16px}[data-tps="S"] .pffvt{font-
size:0}[data-tps="S"] .pffvi{width:24px;height:24px;mask-size:24px;align-
self:center}.hvpv.h5s .pffvt{display:inline-flex}.hvpv.h5s .vrhrc.pffv
.vrhol{display:none}.hvpv.h5s .vrhrc.pffv .player_ol{background:var(--mai-smtc-

```

```

background-ctrl-on-image-hover);transition:background-color .5s;display:flex;align-items:center;justify-content:center;padding:var(--smtc-gap-between-content-x-small);gap:var(--smtc-gap-between-content-x-small);box-sizing:border-box}.pffvt{text-decoration:underline}.vrhcp .vrhol{position:absolute;width:100%;height:35px;max-height:35px;bottom:0;left:0;padding:0;background:none;display:block;z-index:9}.vrhcp .vrhol.hide,.vrhcp .vrhol .hide{display:none}.vrhot{white-space:nowrap;text-overflow:ellipsis;overflow:hidden;display:inline-block;position:absolute;max-width:240px;height:18px;line-height:14px;margin-left:8px;top:10px;left:0;right:0;border-radius:2px;padding-right:8px}.vrhot div{display:inline-block}.vrhot nt{color:#fff;font-size:11px;font-weight:bold;background-color:rgba(0,0,0,.75);padding:2px 8px;margin-left:0;top:0;box-sizing:border-box;position:relative}.vrhc .ricons{position:absolute;right:8px;top:10px;left:auto;bottom:auto;height:18px;display:inline-block;cursor:pointer}.vrhol.icons_1 .vrhot{margin-right:27px}.vrhol.icons_2 .vrhot{margin-right:49px}.vrhol.icons_3 .vrhot{margin-right:79px}.vrhol .vrhot nt,.vsb_tr_chd .vrhol.icons_1 .vrhot{margin-right:0}.vpb{position:absolute;display:block;bottom:0;left:0;height:4px}.vpb div{position:absolute}.vpb nt{width:0;background:#fff}.vpb nt.test{display:none}.vpb.back{background-color:#999}.vrhcp .vrhol.npb{height:36px;max-height:36px}.vrhol .vadda{width:22px;height:18px;padding:0;margin-right:0;margin-left:2px;bottom:0;position:relative;display:inline-block;z-index:1;background:rgba(0,0,0,.75);border-radius:2px;overflow:hidden}.vrhol .vadda.hide{display:none}.vrhol .vadda .mc_vfaa{margin:3px 5px}.ricons .vol{float:left}.ricons .adultFlag{float:right}.vol{width:22px;height:18px;bottom:0;margin-left:1px;margin-right:1px;position:relative;display:inline-block}.vol.hide,.vol .hide{display:none}.vol .bg{background:rgba(0,0,0,.75);border-radius:2px}.vol.bg,.vol nt{position:absolute;bottom:0}.vol .vol.bg.volnb{border-radius:0 0 2px 2px}.vol .volsliderHandle.bg{border-radius:2px 2px 0 0}.vol nt .volsliderHandle{height:70px;display:none;width:22px;float:left;bottom:18px;position:absolute;display:block}.vol nt .volsliderHandle.hide{display:none}.volsliderHandle .vsb{height:54px;width:4px;background-color:#999;margin:9px auto 8px;position:relative;display:block;border-radius:2px}.volsliderHandle .vsh{height:6px;width:14px;padding:9px 7px 9px 7px;margin:0 -12px;display:block;position:absolute;top:30px}.volsliderHandle .vsh.hide{display:none}.volsliderHandle .vshi{height:4px;width:14px;background-color:#fff;border-radius:2px}.volMutelcon{width:16px;height:14px;margin:2px 4px;float:left}.volMuteHandle{width:22px;height:18px}.vo{background:url(/rp/fFZxBXEIP9WYOO0jhTaElyLhEVU.svg) no-repeat}.vm{background:url(/rp/fsX-ZVd03wB2TL0vmQjxSp4U9vs.svg) no-repeat}.vl{background:url(/rp/YXYMPC1Rry_XJGc7Yg8IR4B2eEs.svg) no-repeat}.vf{background:url(/rp/NosrIR4amKTs1zYxWy3laZN3HRk.svg) no-repeat}@media(forced-colors:active){.vol{forced-color-adjust:none}}.vrhc line .vt_vp,.vrhc.popout .vt_vp,.vrhc.mousefollow .vt_vp{position:absolute;bottom:0;border:1px solid #ccc;border-radius:2px;background-color:#fff;position:relative;padding:0;top:0;left:0;z-index:3}.vrhtc .hide{display:none}.vrh_clc .vt_vp,.vrh_clc .vrhtc .vrhi,.vrh_clc .player_ol{cursor:pointer}.vrh_clc .cico{border-radius:0}.vrhtc{border:1px solid #ccc;position:relative;padding:0}.vrhc.mousefollow .vrhtc,.vrhc.popout .vrhtc{background-color:#999}.vrhtpc.load .player_ol{background:url(/rp/j_o2maogFDeUOsovPJL-ofEuxJ4.gif) center center no-

```

```
repeat}.vrhc line .vrhtc .vrhi,.vrhc.popout .vrhtc .vrhi,.vrhc.mousefollow .vrhtc .vrhi{p
osition:absolute!important;border:hidden;z-index:2;padding:0;left:0;top:0}.player_ol{
position:absolute;width:100%;height:100%;bottom:0;border:hidden;z-
index:7}.vrhc.popout,.vrhc line,.vrhc.mousefollow{border-radius:6px;overflow:hidden
;display:table-row-group;background:none}.vrhc.popout,.vrhc.mousefollow{z-
index:4;box-shadow:0 4px 4px rgba(0,0,0,.1),0 2px 80px rgba(0,0,0,.2)}.vrhc line{z-
index:1;margin:0}.vrhc.popout,.vrhc
line{position:absolute;top:0}.vrhc.popout{border:1px solid #fff}.vrhc.mousefollow{p
osition:fixed}.vrhcp{position:relative;top:0;left:0;display:table-row}.vrhcp
.vrhtc{position:relative;overflow:hidden}.vrhc.hide{display:none}@keyframes
vh_fadein{from{opacity:0}to{opacity:1}}.vrhc:not(.hide){animation:vh_fadein
250ms}.vrhc line img{color:transparent}.vrhc line.fullsize{height:100%}.vrhc,.vrhc:h
over,.vrhc:link,.vrhc:active,.vrhc:visited{color:#000;text-decoration:none}.vrhc.vrh_c
lc{cursor:pointer}a.hover-anchor{display:block;height:100%;width:100%;text-
decoration:none}.vrhstat{height:0;overflow:hidden}
```

Contact Us

For more information, pricing, or custom energy solutions, please contact us:

Website: <https://gdroofing.co.za>

Email: sales@gdroofing.co.za

Phone: +27 72 418 9365

Address: 22 Electron Avenue, Isando, Johannesburg, 1600, South Africa

This document is for informational purposes only. Specifications subject to change without notice.

