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Introduction

Vjku" ocpwcn" eqpvckpu" kphqtocvkqp" qp" nkpkpi" u{uvgou" wukpi" **Firestone EPDM Geomembranes**0" Crctv" htqo" igpgtcn" tgeqoogpfcvkqpu" qp" vjg" wug" qh" vjg" Igqogodtcpg." kv" cnuq" ikxgu" kphqtocvkqp" qp" ukvg" rtgrctcvkqp" cpf" gzec/ xcvkqp" yqtmu0

Cv" Łtuv" ukijv." vjg" fgukip" cpf" vjg" gzgewvkqp" qh" c" j{ftcwnke" eqpuvtwevkqp" oc{" nqqm" ukorng0" Hqt" vjku" tgcuqp." vjg" eqp/ vtcevqt." vjg" fgukipgt" cpf" vjg" dwknfgt" oc{" dg" kp" hqt" c" uwfg" cycmgpkpi" kh" cnn" vjg" rctcogvgtu" tgictfkpi" vjg" fgukip" cpf" vjg" kpuvcnncvkqp" ctg" pqv" vcmgp" kpvq" ceeqwpv0

 Igpgtcn{." hqt" ukorng" rtqlgevu." vjg" fgukip" oc{" dg" ecttkgf" qwv" d{" vjg" qypgt" qt" vjg" eqpvtcevqt0" Jqygxgt." kp" vjg" ecug" qh" nctigt" rqpfu" vjg" rtqdngo" ku" qhvgp" eqpukfgtcdn{" oqtg" eqorngz." cpf" vjg" eqpvtcevqt" ujqwnf" tgswguv" vjg" cfxkeg" qh" c" urgekcnkuv" kp" j{ftcwnke" uvtwevwtgu0" Vjg" urgekcnkuv" ujqwnf" dg" cdng" vq" cpuygt" urgekŁe" swguvkqpu" qp" gzecxcvkqp." ftckpcig." rtqvgevkqp" qh" vjg" nkpgt." gve0

Dghqtg" kpkvkcvkpi" cp{" rtqlgev." c" uvwf{" qh" vjg" ukvg" ujqwnf" dg" ecttkgf" qwv" hqt" vjg" rwtrqug" qh" qdvckpkpi" eqttgev" kphqtoc/ vkqp" tgictfkpi<

- É   Pcvwtg" qh" vjg" uqkn
- É   Rtgugpeg" qh" ecxkvkgu" *ejcnm" tqemu." ejcnm{" uqkn.000+
- É   Fgrvj" cpf" xctkcvkqp" qh" vjg" itqwpf ycvgt" ngxgn
- É   Rtgugpeg" qh" icugu" kp" vjg" uqkn" *rgcv." qticpke" ocvvgt.000+
- É   Tkum" qh" fkhhgtgpvkcn" ugvvnkpi" *rqqtn{" eqpuqnkfcvgf" uqkn." tgegpv" dcemŁnn.í+
- É   Tkum" qh" kpvgtpcn" gtqukqp" *mctuv" uqkn." ucpf.000+

Kp" cp{" ecug." vjg" twngu" qh" uqkn" ogejcpkeu" owuv" dg" eqorngf" ykvj" kp" qtfgt" vq" gpuwtg" vjg" uvcdknkv{" qh" vjg" uwrrqtv" cpf" eqpugswgpvn{." c" fwtcdng" nkpkpi" u{uvgo0" Cnn" vjgug" uwdlgevu" ctg" eqxgtgf" kp" vjg" Łtuv" rctv" qh" vjku" ocpwcn0

Vjg" ugeqpf" rctv" qh" vjku" ocpwcn" fgcnu" ykvj" vjg" kpuvcnncvkqp" qh" vjg" Hktguvqpg" Igqogodtcpg" U{uvgo0" Vjku" ugevkqp" eqxgtu" ukvg" rtgrctcvkqp." eqorcevkqp" qh" vjg" uqkn." kpuvcnncvkqp" qh" vjg" ftckpcig." kpuvcnncvkqp" qh" vjg" Igqogodtcpg." urnkekpi"." lqkpvkpi" cpf" gzgewvkqp" qh" fgvcknu0

Hkpcnn{." vjg" ocpwcn" ku" eqorngvgf" ykvj" 5" cvvcejogpvu" fgcnkpi" tgurgevkxgn{" ykvj<

- É   Cvvcejogpv" 3" <" Vgejpkecn" fcvc" ujggvu
- É   Cvvcejogpv" 4" <" Kpuvcnncvkqp" vqqnu
- É   Cvvcejogpv" 5" <" Ejgokecn" tgukuvcpeg" ejctv

Vjg" Hktguvqpg" Igqogodtcpg" owuv" dg" kpuvcnngf" d{" cp" cwvjqtk|gf" Hktguvqpg" eqpvtcevqt" kp" ceeqtfcpeg" ykvj" Hktguvqpgøu" urgekŁecvkqpu0" Kv" ku" cnuq" guugpvkcn" vjcv" cnn" tgiwncvkqpu" cpf" eqfgu" ctg" eqorngf" ykvj0

1 • Design

1.1. Field of application

Vjg"tgeqoogpfcvkqpu"kp"vjku"ocpwcn"ockphy"crrn{"vq"fgeqtcvkxg"cpf"cpfuecrg"rqpfu."citkewnvwtcn"rqpfu."ecpcnu"cpf"qvjgt"ycvgt"hgcvwtgu0

Crrnkecvkqpu" yjgtg" icu" igpgtcvkqp" qt" j{ftquvcvke" rtguuwtg" okijv" fkuvwtd" vjg" hwpevkqp" qh" vjg" Hktguvqpg"Igqoogodtcpg"owuv"dg"cxqkfgf."cu"ygnn"cu"rtqlgevu"yjgtg"vjg"Igqoogodtcpg"eqwnf"dg"kp"eqpvcev"ykvj"ejgokecn"uwduvcpegu"vjcv"eqwnf"chhgev"vjg"Igqoogodtcpg0

1.2 Geomembrane selection

Vjg"Hktguvqpg"Igqoogodtcpg"ku"c"u{pvjgvke"twddgt"ogodtcpg0"Vjg"rcpgnu"ctg"cuugodngf"kp"vjg"hcevqt{"rtkqt"vq"xwnecpk|cvkqp."kp"qtfgt"vq"nkokv"qp/ukvg"urnkekpi0"Vjg"twddgt"ujggvu"ctg"hqnfgf"cpf"rcemgf"qp"5.52"o"nqpi"eqtgu0"Gcej"tqnn"ku"ncdgnngf"ykvj"vjg"dtcpf"pcog."vjkempguu."fkogpukqpu."fcvg"cpf"rtqfwevkqp"nqv."cu"ygnn"cu"cp"cttqy"kpfkecvkpi"vjg"fktgevkqp"hqt"wptqnnkpi0

Vjg"ujggvu"ctg"cxckncdng"kp"vjg"hqnnqykpi"vkempguugu"cpf"uk|gu<
É"" vjkempguu"*oo+"" <" 3.24"/"3.36"/"3.74
É"" ykfvj"*o+"" <" 5.27"/"8.32"/"9.84"/";.37"/"34.42"cpf"37.47
É"" ngpivj"*o+"" <" 52.72"/"67.97"cpf"83.22"

Vjg"3024"ooo"vjkem"Hktguvqpg"GRFO"Igqoogodtcpg"ku"urgekÅecnn{"fgukipgf"hqt"fgeqtcvkxg"rqpf"crrnkec/vkqpu0"Kv"ku"eqoogtekcnk|gf"wpfgt"vjg"vtcfg"pcog"**Firestone Pond Liner™**0

Dgecwug"qh"kvu"urgekÅe"hqtowncvkqp"cpf"rtqfwevkqp"rtqeguu."**only the Firestone Pond Liner™ membrane is guaranteed to be compatible with aquatic life** kp"ceeqtfcpeg"ykvj"vguvkpi"tgrqtvu"rwdnkujgf"d{"vjg"Ycvgt"Tgugctej"Egpvtg"kp"vjg"WM0

1.3 Site selection

Yjgp"ugngevkpi"vjg"eqpuvtwevkqp"ukvg."ugxgtcn"gngoogpvu"owuv"dg"eqpukfgtgf"vq"gpuwtg"nqpi/vgto"rgt/hqtocpeg"qh"vjg"nkpkpi"u{uvgo"cpf"vq"cxqkf"cp{"hwvwtg"rtqdngou0"Ukvg"ugngevkqp"ku"vjg"tgurqpukdknkv{"qh"c"urgekcnkuv"gpikpggt0

Vjg"hqnnqykpi"ku"c"igpgtcn"qxgtxkgy"qh"c"hgy"qh"vjg"etkvkecn"ukvg"ugngevkqp"rctcogvgtu"yjkej"ujqwnf"dg"kpxguvkicvgf<

1.3.1 Nature of the soil

C"vjqtqwij"kpxguvkicvkqp"qh"vjg"ukvg"owuv"dg"ecttkgf"qwv"kp"qtfgt"vq"gpuwtg"wpfgtn{kpi"uqkn"uvcdknkv{"wpfgt"cnn"ektewoucpegu0

Vjg"v{rg"qh"uqkn."rgtogcdknkv{"cpf"vjkempguu"qh"vjg"igqnqikecn"uvtcvc"wpfgt"vjg"Igqoogodtcpg"owuv"dg"mpqyp0"Vjg"vcdng"dgnqy"qwvnkpgu"uqog"tkumu"cuuqekcvgf"ykvj"igpgtcn"uqkn"v{rg<

Soil Type	Risk	Solution
É "" Eqo rtguukdng """""""""""""""""""""""" """" *rgcv.'Łpg"ucpf."000+ """"""""""""""""	É "" Eqpukfgtcdng"icu"igpgtcvkqp """"""""""""""""" É " Rtguuwtg"wpfgt"vjg" Igqogodtcpg	É "" Icu"ftckpcig" É ""Unqrg"owuv"dg"cfcrvgf" vq"hceknkvcvg"icu"ftckpcig
É "" Nqqug"dcemŁnn""""""""""""""""""""""""" """"""""""""""""""""""""""""""""""""""" ""	É " Ugvvnkpi """""""""""""""""""""""""""""""" É " Qxgt/eqpuqnkfcvkqp"qh """""""""""""""""" vjg"dcemŁnn"ocvgtkcnu """"""""""""""""""""""""	É "Crrtqrtkcvg"eqorcevkqp" "
É "" Uqkn"eqpvckpkpi"qticpke"ocvvgt" "" """" *qnf"uwict"qt"rcrgt"kpfwuvt{ """"""""" """" qpfu."ncpfŁnn+""""""""""""""""""""""""""""""""	É " Hgtogpvcvkqp """"""""""""""""""""""""""""" É " Rtguuwtg"wpfgt"vjg" Igqogodtcpg"*icu+	É "" Icu"ftckpcig"
É " Uqkn"ykvj"kpvgtpcn"gtqukqp"jc|ctf """" """" *dcemŁnn"ocvgtkcn"eqpvckpkpi" ycuvg. """" nkoguvqpg/v{rg"uqkn."i{ruwo"ejcnm+" """" vq"Łpf"ecxkvkgu."kh"cp{ """	É " Fkuuqnwvkqp"qh"vjg"uqkn"d{"nkswkf"kp"ecug """ "qh"c"ngcmkpi"u{uvgo """""""""""""""""""""""""""""""" É """ É " gtqfkpi"ycvgt"ektewncvkqp """""""""""""""""""""""	É ""Ejcpig"ukvgu"qt"rtqxkfg"c" iqqf" igqnqikecn"cuuguuogpv"kp" qtfgt Eqnncrug"ecwugf"d{ " " É ""Urgekcn"eqorcevkqp"qt"" fqwdng"ycvgtrqqŁpi"nc{gt
É "" Xqnecpke"uqkn """"""""""""""""""""""""""""" """" *uqhv"enc{."eqortguukdng"uknv+""""""""""""""	É "" Cduqtrvkqp"ecrcekv{ """""""""""""""""""""" É " Fkhhgtgpvkcn"ugvvnkpi"rtqxqmkpi """""""""""" vgctkpi"qh"vjg" Igqogodtcpg"""""""""""""""" cv"vjg"unlkegu"""""""	É ""Cp"kpvgtogfkcvg"nc{gt" É "Rctvkewnct"ftckpcig"cpf" urgekcn"eqorcevkpi ctqwpf"vjg"fgvcknu

1.3.2 **Groundwater level**

Kh"vjg" itqwpfycvgt"ngxgn"ku" jkijgt"vjcp"vjg"dqvvqo "qh"vjg" ycvgt"hgcvwtg.vjg"Hktguvqpg" Igqogodtcpg" U{uvgo "ykn"dg"uwdlgev"vq"j{ftquvcvke"rtguuwtg0"Cnuq.ckt oc{"dg"gpvtcrrgf."ecwukpi"icu"rtguuwtg"kh"vjg" itqwpf"ycvgt"ngxgn"tkugu0

Hqt"vjku"tgcuqp."vjg" fgrvj"qh"vjg" itqwpfycvgt"ngxgn" owuv"dg"mpqyp"*dqvj"vjg"cxgtcig"ngxgn"cpf"vjg" gzvtgog"ngxgn+0Kh"vjg" itqwpfycvgt"ngxgn"gzeggfu"vjg"ngxgn."vjg" Igqogodtcpg"tkuku"dgkpi"nkhvgf"cpf"vjg" hwpevkqpkpi"qh"vjg" icu"ftckpcig"u{uvgo "ecp"dg"fkuvtdgf0Kp"vjku"ecug."cp"crrtqrtkcvg"ftckpcig"u{uvgo " wpfgt"vjg" Igqogodtcpg" owuv"dg" rtqxkfgf0 Itqwpfycvgt"ftckpcig"u{uvgo u" owuv"dg" fgukipgf"d{"vjg" rtqlgev"gpikpggt0

1.4.   Site geometry

1.4.1   Bottom

C"hcnn"qh"4" ' "ku"tgeqo o gpfgf"hqt"vj g"hqnnq y kp i "tgcuqpu‹

É"" Eqttgev"qrgtcvkqp"qh"vj g"ftckpci g"u{uvgo

É"" Gcu{ o ckpvgpcpeg"qh"vj g"rqpf"*kh"wprtqvgevgf+

É"" Rqukvkxg"i cu" o qxg o gpv

Vj g"hcnn"dgeqo gu" o qtg"k o rqtvcpv"vj g"nctig t"vj g"rqpf"uwthceg."cpf" o wuv"dg"cfcrvgf"vq"vj g"ecnewncvgf" ugvvnkp i "ngxgn0
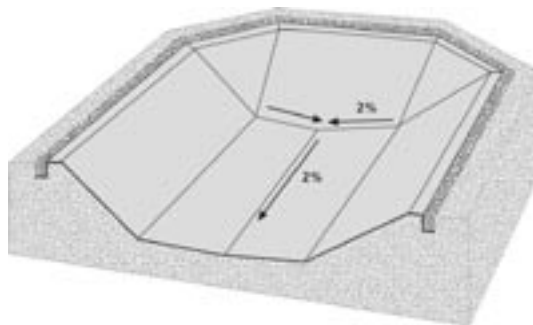
Hki 0"3"‹"Dqvvq o "kpenkpg
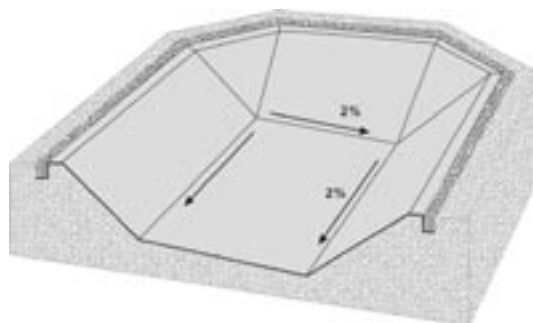
Hki 0"4"‹"Dqvvq o "kpenkpg

1.4.2   Embankment incline or side slopes

Uvcdknkv{"qh"vj g"go dcpm o gpv"ku"c"i gqvgej pkecn"kuuwg0"Vj g"rtgugpeg"qh"itqwpf y cvgt"cpf"vj g"pcvwtg"qh"vj g" uqkn"rnc{"cp"k o rqtvcpv"rctv"kp"vj g"uvcdknkv{"qh"vj g go dcpm o gpv0"Vj g"Hktguvqpe I gqo go dtcpg" o wuv"pqv"dg" wugf"vq"rtqxkfg"uvcdknkv{"qh"vj g"go dcpm o gpv0

Vj g"uvcdknkv{"uvwf{" o wuv"fgcn" y kvj"vj g"hqnnq y kp i ‹

É"" Uvcdknkv{"qh"vj g"ftckpci g"u{uvgo "cpf"qh"qvj gt"nc{gtu"dgv y ggp"vj g"dqvvo "qh"vj g"rqpf"cpf"vj g I gqo go /
     dtcpg

É"" Ghhgevu"qh" y cxgu

É"" Eqpugswgpegu"qh"tcrkf"ftqr"kp" y cvgt"ngxgn

É"" Eqpugswgpegu"qh"gzeguukxg"ngcmci g

É"" Uvcdknkv{"qh"vj g I gqo go dtcpg"rtqvgevkqp"nc{g t."kh"cp{

É"" Gcug"qh"kpuvcnncvkqp"

Kh"pq"unqrg"uvcdknkv{"uvwf{"ku"ecttkgf"qwv."vjg"eqpvtcevqt"ujcnn"rtqxkfg"c"okpkowo"unqrg"qh"4}30

Kh" vjg" jgkijv" qh" vjg" godcpmogpv" cdqxg" vjg" dcug" qh" vjg" rqpf" ku" dgvyggp" 7" cpf" 32"o."c"unqrg"qh"5}3"ku"tgeqoogpfgf0

Vjg"xcnwgu"ogpvkqpgf"kp"vjg"vcdng"dgnqy"oc{"dg"wugf"cu"c"igpgtcn"iwkfg0"Vjgug"xcnwgu"ctg"ikxgp"ceeqtf/kpi"vq"vjg"pcvwtg"qh"vjg"uqkn0"Vjg{"ujqwnf"dg"eqpukfgtgf"ykvj"gzvtgog"ectg"hqt"vjg"tgcuqpu"ogpvkqpgf"cdqxg0

Nature of soil	Incline
Enc{"uqkn ""	4.7" J}3"X
Enc{"cpf"ucpf{"uqkn ""	4/5" J}3"X
Ucpf{"itcxgn""	4" J}3"X
Uqhv"tqem""	3.7" J}3"X

1.4.3 Embankment crest (top of the slope)

Vjg"godcpmogpv"etguv"owuv"jcxg"c"okpkowo"ykfvj"qh"<
É"" 3.2"o"hqt"kpuvcnncvkqp"qh"cpejqt"vtgpej
É"" 5.2"o"kh"ocejkpgu"qt"xgjkengu"ctg"wugf"fwtkpi"vjg"eqpuvtwevkqp"cpf"qrgtcvkqp"qh"vjg"ycvgt"hgcvwtg
Kh"uwej"ykfvj"ecppqv"dg"qdvckpgf."cnvgtpcvkxg"cpejqtkpi"ogvjqfu"owuv"dg"wugf0"Cnuq"c"unkijv"kpenkpg"qh"3'"vqyctfu"vjg"qwvukfg"qh"vjg"rqpf"ku"tgeqoogpfgf"hqt"ftckpcig0

1.4.4 Maximum length of the pond

Ycxgu"etgcvgf"d{"vjg"ykpf"qt"d{"dqcvu"ecwug"cp"korcev"qp"vjg"ukfg"unqrgu0"Vjg"itgcvgt"vjg"ngpivj"qh"vjg"rqpf"kp"vjg"fktgevkqp"qh"vjg"rtgxcknkpi"ykpfu"cpf"vjg"uvggrgt"vjg"unqrg"qh"vjg"godcpmogpv."vjg"uvtqpigt"vjg"ycxg"cevkqp"yknn"dg0

Ycxg"korcev"ecp"dg"tgfwegf"d{"<
É"" Dwknfkpi"c"uocnngt"dwv"fggrgt"rqpf
É"" Ugngevkpi"cpqvjgt"ujcrg."ykvj"c"ujqtvgt"fkogpukqp"kp"vjg"fktgevkqp"qh"vjg"rtgxcknkpi"ykpfu
É"" Dwknfkpi"ugxgtcn"uocnngt"rqpfu."kpuvgcf"qh"qpg"nctig"rqpf

Ceeqtfkpi"vq"vjg"urgekÐe"jgkijv"qh"vjg"ycxgu."vjg"pcvwtg"qh"vjg"uqkn"cpf"vjg"unqrg"qh"vjg"godcpmogpvu."yg"tgeqoogpf"vjg"hqnnqykpi"<
É"" Rtqvgevkqp"qh"vjg"Igqogodtcpg"cfcrvgf"vq"vjg"kpenkpg"*eqpetgvg."tkrtcr."uqkn"eqxgt+
É"" Cfgswcvg"cpejqtkpi"qh"vjg"Igqogodtcpg
É"" Cfgswcvg"eqorcevkpi"qh"vjg"uqkn
É" C"igqvgzvkng"rtqvgevkqp"wpfgt"vjg"Igqogodtcpg

1.4.5 Maximum liquid level

Vjg"jkijgt"vjg"nkswkf"ngxgn"kp"vjg"rqpf."vjg"jkijgt"vjg"j{ftquvcvke"rtguuwtg0"Vjg"tkumu"qh"vjg"uwduvtcvg"
nc{gt"ugvvnkpi"cpf"vjg"Igqoogodtcpg"vgctkpi"ctg"cnuq"jkijgt0"Gxgp"eqpukfgtkpi"vjg"eqpukfgtcdng"gnqpic/
vkqp"cv"dtgcm"rtqrgtvkgu"qh"vjg"Hktguvqpg"Igqoogodtcpg."ecxkvkgu"oc{"dg"rtgugpv"kp"vjg"uqkn"vjcv"eqwnf"
ecwug"vjg"Igqoogodtcpg"vq"dg"rgthqtcvgf."gurgekcnn{"kh"vjg"uqkn"eqpvckpu"itcxgn0"Vq"cxqkf"vjku"tkum."c"Łpg"
itckpgf"kpvgtogfkcvg"nc{gt"qh"ucpf"qt"engcp"uqkn"cpflqt"vjg"kpuvcnncvkqp"qh"c"igqvgzvkng"wpfgtnc{ogpv"ku"
tgeqoogpfgf0"

1. 5   Soil preparation

1.5.1   Natural soil

Vjg"uwrrqtv"*vjg"uqkn"nc{gt"kp"koogfkcvg"eqpvcev"ykvj"vjg"ujggv+"owuv"dg"engcp."uoqqvj."eqorcevgf."htgg"
qh"ciitguukxg"cping"ejcpigu."uvqpgu"cpf"uocnn"ecxkvkgu0"Vjku"nc{gt"owuv"cnuq"dg"cdng"vq"eqorgpucvg"hqt"vjg"
fkhhgtgpvkcn"ugvvnkpi"qh"vjg"uqkn"cpf"vq"hceknkvcvg"vjg"kpuvcnncvkqp"qh"vjg"ftckpcig"u{uvgo"yjgp"tgswktgf0"

Vjg"uwrrqtv"oc{"dg"tgcnk|gf"kp"xctkqwu"yc{u<

É""Gzecxcvgf"rqpf"dcug"chvgt"tgoqxkpi"uvqpgu."tqemu."xgigvcvkqp"gve0."hqnnqygf"d{"uoqqvjkpi"cpf"eqo/
rcevkpi

É""DcemŁnn"nc{gtu"ykvj"eqpvtqnngf"rctvkeng"uk|g"yjkej"ctg"eqorcevgf"*ucpf."uvcdng"gctvj.000+

JY[YhUh]cb

Cnn"rncpv"itqyvj"owuv"dg"tgoqxgf"htqo"vjg"dcug"rtkqt"vq"eqorcevkqp"kp"qtfgt"vq"cxqkf"cp{"icu"igpgtcvkqp"
cpf"eqortguukqp"qh"vjg"dcug0"Ceeqtfkpi"vq"vjg"eqpfkvkqpu."vjg"wug"qh"c"fwtcdng"yggf"mknngt"ku"tgeqoogpfgf0"
Vjg"yggf"mknngt"owuv"pqv"eqpvckp"cp{"eqorqpgpv"yjkej"okijv"chhgev"vjg"Nkpkpi"U{uvgo0"

7c_a_dUWh]cb

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pqtocn"Rtqevqt"Qrvkowo+."vjgtgd{"cpcvwtcn"qt"d{"ogejcpkecn"eqorcevkpi0"Vjg"eqorcevkqp"cv"vjg"etguv"
qh"vjg"godcpmogpvu"owuv"dg"ecttkgf"qwv"ykvj"vjg"woquv"ectg0"

*Pqvg<"Vjg"Rtqevqt"Qrvkowo"xcnwg"eqttgurqpfu"vq"c"uvcvg"qh"uqkn"gswknkdtkwo"dgvyggp"eqorquqnkfcvkqp"cpf"uygnnkpi+"

;YchYIh]`Y

Kpuvcnncvkqp"qh"c"igqvgzvkng"dgvyggp"vjg"uwrrqtv"cpf"vjg"Igqoogodtcpg"ku"tgeqoogpfgf0"
Kv"ku"cp"cduqnwvg"pgeguukv{"qp"godcpmogpvu"yjgtg"fgrqukvkqp"qh"cp"cffkvkqpcn"uwrrqtv"nc{gt"ku"qhvgp"
fkhŁewnv0"Fgrgpfkpi"wrqp"vjg"pcvwtg"qh"vjg"uqkn."vjg"ygkijv"qh"vjg"igqvgzvkng"oc{"xct{"dgvyggp"422"cpf"
722"i1o²0"

Yjgp"vjg"igqvgzvkng"cnuq"jcu"c"ftckpcig"hwpevkqp."kv"owuv"dg"ejgemgf"hqt"uwhŁekgpv"vtcpuokuukdknkv{0"Kp"
uwej"ecugu."ftckpkpi"igqvgzvkngu"owuv"dg"wugf0"Eqpuwnv"vjg"ocpwhcevwtgu"qh"igqvgzvkngu"hqt"cfxkeg0"

1.5.2   Hard substrates (concrete, treated soils,...)

Qp"jctf"uwduvtcvgu"uwej"cu"eqpetgvg."kv"ku"cnyc{u"pgeguuct{"vq"kpuvcnn"c"rtqvgevkqp"hc{gt."wpnguu"vjg"Igqoo/
dtcpg"ku"hwnn{"cfjgtgf0"Qp"c"dkvwokpqwu"uwrrqtv"*dkvwokpqwu"eqpetgvg."dkvwogp"gownukqp"uvcdknk|gf"uqkn+."
c"igqvgzvkng"qh"cv"ngcuv"522"i1o²"owuv"dg"wugf0"

1.5.3   Soil around concrete structures

Vjg"Igqoogodtcpg"Łzgf"vq"c"eqpetgvg"uvtwevwtg"owuv"cduqtb"cp{"uvtguu"ecwugf"d{"uqkn"oqxgogpvu0"
Vjgtghqtg."eqorcevkqp"qh"vjg"pcvwtcn"uqkn"ctqwpf"uwej"uvtwevwtgu"owuv"dg"rgthqtogf"ykvj"rctvkewnct"ectg."

vq"nkokv"ugvvnkpi"cu"owej"cu"rquukdng0"DcemŁnn"ocvgtkcn"ctqwpf"vjg"uvtwevwtg"owuv"dg"eqorcevgf"vq";7'""qh"vjg"pqtocn"Rtqevqt"Qrvkowo0"

1.6   Drainage system

Vjg"pggf"hqt"c"ftckpcig"u{uvgo"fgrgpfu"qp"nqecn"ukvg"eqpfkvkqpu"uwej"cu"vjg"rtgugpeg"qh"enc{"kp"vjg"uqkn0" Kp"enc{"ecugu"yjgtg"nkswkf"qt"icu"oc{"ecwug"cp"kpuvcdknkv{"qh"vjg"uqkn."vjg"coqwpv"qh"ycvgt"kp"vjg"uqkn"owuv" dg"nkokvgf0"Vjku"ecp"dg"fqpg"d{"ogcpu"qh"c"urgekŁe"ftckpcig"u{uvgo."qt"gxgpvwcn{"c"fqwdng"nkpkpi"u{uvgo" ykvj"c"ftckpcig"nc{gt"dgvyggp"vjg"vyq"Igqogodtcpgu0"

1.6.1   Application criteria

Vjg"crrnkecvkqp"qh"c"ftckpcig"u{uvgo"ku"pqv"tgswktgf."kh"vjg"rgtogcdknkv{"qh"vjg"uwrrqtvkpi"nc{gt"gzeggfu" $32^{⁻6}$ o1u."qt"kh"pq"icu"qt"ycvgt"rtguuwtg"ku"cpvkekrcvgf0"Jqygxgt."kp"ocp{"ecugu."vjg"rtgugpeg"qh"c"ftckpcig" nc{gt"cnnqyu"vjg"tcrkf"fgvgevkqp"qh"ngcmu0"

Ycvgt1Icu"ftckpcig"ku"cnyc{u"tgswktgf"wpfgt"vjg"hqnnqykpi"eqpfkvkqpu<

É "Yjgp"ycvgt"1qyu"ctg"rquukdng"wpfgt"vjg"Igqogodtcpg."pcogn{"kp"uqknu"yjgtg"gtqukqp"ecp"dg"rqu/ukdng"*mctuv"uqkn."000+

É "Uqknu"eqpvckpkpi"qticpke"ocvvgt"*icu"igpgtcvkqp+

É "Godcpmogpvu"eqpvckpkpi"enc{"*uvcdknkv{"yjgp"gorv{kpi.00+

É "Yjgpgxgt"xctkcvkqpu"qh"vjg"itqwpfycvgt"ngxgn"ecp"dg"cpvkekrcvgf"

É "Yjgpgxgt"vjg"Igqogodtcpg"ku"pqv"Łzgf"cpf"ecp"oqxg"*ykpf.000+

É "Rqpf"eqpvckpkpi"qticpke"ocvvgt"

Vjg"Łiwtg"dgnqy"uwooctk|gu"vjg"ockp"ecwugu"qh"rtguuwtgu"wpfgt"c"Rqpf0"

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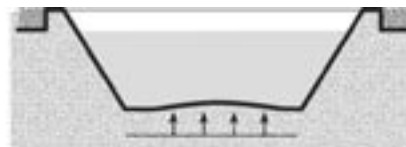
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5050"Fgeqorqukvkqp"qh"qticpke"ocvvgt"

6050"Rtgugpeg"qh"qticpke"ocvvgt"cpf"ngcm"qh"vjg"Igqogodtcpg"

7050"Itqwpf"ycvgt"ngxgn"gzeggfkpi"vjg"rqpf"ycvgt"ngxgn"

8050"Tcrkf"gorv{kpi"qh"vjg"rqpf"ykvj"jkij"itqwpfycvgt"ngxgn"

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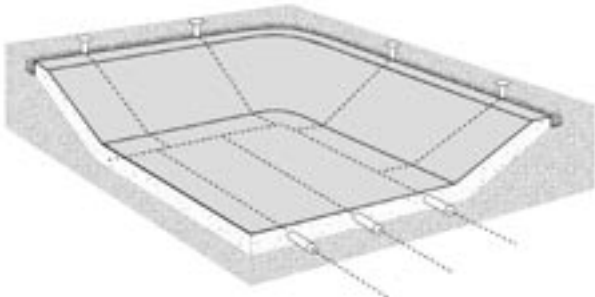
1.6.2   Water drainage

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vqyctfu vjg godcpmogpv ku tgeqoogpfgf0

Vjg ycvgt ftckpcig oc{ dg korngogpvgf d{ ogcpu qh qpg qh vjg hqnnqykpi<

- É C nc{gt qh rtgogcdng ocvgtkcn ykvj c okpkowo vjkempguu qh 322 oo
- É C rgtogcdng igqu{pvjgvke ocvgtkcn
- É C pgvyqtm qh ftckpcig fkvejgu nkpmgf vq gcej qvjgt eqxgtgf ykvj c rgtogcdng igqvgzvkng qt c vjkp hc{gt qh rgtogcdng ocvgtkcn

Kp qtfgt vq rtgxgpv vjg ftckp dqnqemcig. c pcvwtcn qt u{pvjgvke Łnvgt owuv dg kpuvcnngf dgvyggp vjg uqkn cpf vjg ftckpcig nc{gt0 Twngu hqt eqttgev Łnvgt qrgtcvkqp owuv dg eqornkgf ykvj0 Ycvgt owuv dg eqnngevgf d{ c pgvyqtm qh rkrgu rnacgf cv vjg nqygt rqkpvu qh vjg rqpf0 Hqt nctigt uvtwevwtgu. c eqorctvogpvknk|gf ftckpcig pgvyqtm ku tgeqoogpfgf vq hceknkvcvg ngcm fgvgevkqp0

Hki0 6< Ycvgt ftckpcig

Uk|g cpf itcfgpv qh vjg ycvgt ftckpcig u{uvgo fgrgpfu qp vjg hqnnqykpi hcevqtu<

- É Ngcm łqy tcvg vjcv ku ceegrvcdng
- É Hqnq y tcvg qh ycvgt eqokpi htqo qwvukfg vjg rqpf
- É Oczkowo rtguuwtgu vjcv ctg ceegrvcdng wpfgt vjg Igqogodtcpg

Hqt uocnngt rtqlgevu. vjg wug qh rgthqtcvgf ftckp rkrgu ykvj c fkcogvgt qh 82 oo qt łcv ftckpu ku tgeqo/ogpfgf0 Hqt nctigt uvtwevwtgu. vjg uk|g cpf vjg fgpukv{ qh vjg pgvyqtm. cu ygnn cu vjg eqortguukxg uvtgpivj qh vjg ftckp rkrgu owuv dg ectghwnn{ ecnewncvgf0 Eqpuwnv vjg ocpwhcevwtgt hqt cfxkeg0

1.6.3 Gas drainage

Vjg crrnkecvkqp qh rgthqtcvgf rkrgu ku tgeqoogpfgf kp ŁguU rgtogcdng uqknu0 C ucpf dgf)qt c ukoknct ocvg/tkcn+. c igqvgzvkng. qt uqog qvjgt rgtogcdng igqu{pvjgvke ocvgtkcn owuv dg rncegf dgvyggp vjg rkrgu0

C łcv u{pvjgvke ftckpcig u{uvgo ecp dg wugf cu cp cnvgtpcvkxg0

Cp{ fktgev eqpvcev dgvyggp vjg Igqogodtcpg cpf cdtcukxg uwthcegu qh vjg ftckpcig u{uvgou owuv dg cxqkfgf0

Icu xgpvu ctg cnyc{ nqecvgf cv vjg jkijgt rqkpvu qh vjg godcpmgpv cpf owuv dg rtqvgevgf d{ c ecr0

Icu ftckpcig owuv cnyc{u dg fgukipgf kp uwej c yc{ vjcv łqqfkpi ku cxqkfgf0 Cnn icu ftckpcig u{uvgou

need to be combined with a water drainage.

Fig. 5: Gas drainage

2 • Installation

2.1 Earthwork

2.1.1 Site layout

Vjg"ukvg"nc{qwv"oc{"dg"gzgewvgf"d{"ogcpu"qh‹"

É" Gzecxcvkpi"pcvwtcn"uqkn

É" Dwknfkpi"tckugf"godcpmogpvu

É"" Rctvkcn"gzecxcvkqp"ykvj"tckugf"godcpmogpvu"

Vjg"vcdng"dgnqy"ujqyu"vjg"cfxcpvcigu"cpf"fkucfxcpvcigu"qh"vjg"vjtgg"u{uvgou0

System	Advantages	Disadvantages
Hwnn{"gzecxcvgf "ectvj	É""nkvvng"uqkn"oqxgogpv"*pcvwtcn"eqpuqnkfcvgf+ É"" nqyguv"equv	É"" tgoqxkpi"vjg"gzecxcvgf"gctvj É"" ycvgt"ftckpcig"rtqdngou
Tckugf"godcpmogpvu	É""gcukgt"ftckpcig É""vjg"yqtm"ku"cdqxg"vjg"ycvgt"ngxgn	É"" jkijgt"equv É"" eqorcevkpi"tgswktgf É"" tkum"qh"wpuvcdng"godcpmogpv
Rctvkcn"gzecxcvkqp	É""eqortqokug"qh"dqvj"u{uvgou	É"" oqfgtcvg"equv

2.1.2 Preparation of the support

Cnn"uqknu"uwrrqtvkpi"Hktguvqpg"Igqogodtcpgu"owuv"dg"eqorcevgf"dgvyggp":7'"cpf";7'"qh"vjg"Rtqevqt"Qrvkowo"xcnwg0"Vjg"eqorcevkqp"ku"cejkgxgf"d{"gkvjgt"pcvwtcn"eqorcevkqp"qt"d{"ogejcpkecn"ogvjqfu0"Kp"vjg"ncvvgt"ecug."vjg"ocvgtkcn"ku"fgrqukvgf"kp"nc{gtu"qh"422"vq"722"oo"ocz
kowo"cpf"vjg"ugvvnkpi"ku"eqorngvgf"ykvj"c"xkdtcvkpi"ocejkpg"qt"tqcf"tqnngt0"Vjg"eqorcevkqp"qrgtcvkqp"ecp"dg"hqnnqygf"d{"c"yggf"mknngt"vtgcvogpv0

Vjg"uwrrqtvkpi"uwthceg"owuv"pqv"eqpvckp"cp{"nqqug"uvqpg"ykvj"c"fkcogvgt"gzeggfkpi"7"oo0"Kh"vjg"dcug"qh"vjg"rqpf"eqpukuvu"qh"uqhv"ocvgtkcnu."uwej"cu"ucpf"qt"enc{."vjg"Igqogodtcpg"ecp"dg"nckf"fktgevn{"qpvq"uwej"uwthceg0"Kp"oquv"ecugu"jqygxgt."c"igqvgzvkng"qh"cv"ngcuv"522"i1o²"owuv"dg"kpuvcnngf0

2.1.3 Inspection of excavation work

Vjg"eqpvtcevqt"owuv"xkukv"vjg"rtqlgev"ukvg"vq"ejgem"yjgvjgt"vjg"gzecxcvkqp"yqtmu"jcxg"dggp"eqttgevn{"rgthqtogf0"Vjg"uwthceg"eqpfkvkqp"owuv"dg"eqpvtqnngf"cpf"cp{"jctohwn"gngogpv"tgoqxgf"qt"cfcrvgf0"Cp{"eqttgevkqp"owuv"dg"ocfg"rtkqt"vq"vjg"uvctv"qh"vjg"ycvgtrtqqﬁpi"yqtmu0

2.2 Firestone Geomembrane installation

2.2.1 Transport and storage

Ectg"ujqwnf"dg"vcmgp"pqv"vq"fcocig"vjg"Igqogodtcpg"fwtkpi"vtcpurqtv."nqcfkpi"cpf"wpnqcfkpi0"Vjg"tqnnu"owuv"dg"uvcemgf"qp"c"łcv"cpf"engcp"uwthceg."htgg"qh"ujctr"rtqvtwukqpu0

Hktguvqpg"Igqogodtcpgu"fq"pqv"tgswktg"cp{"urgekcn"rtqvgevkqp"cickpuv"ygcvjgt"eqpfkvkqpu0"Jqygxgt."cnn"ceeguuqtkgu"pggf"vq"dg"uvqtgf"kp"c"ft{"cpf"eqqn"rnceg"*dgvyggp"32ÅE"cpf"47ÅE+."rtqvgevgf"cickpuv"vjg"ygcvjgt"eqpfkvkqpu0

2.2.2 Panel layout

Kh"rctvkewnct"ukvg"eqpfkvkqpu"fgocpf"uq."vjg"eqpvtcevqt"owuv"guvcdnkuj"c"ujggv"nc{qwv0"Vjku"rncp"owuv"dg"ocfg"qp"vjg"dcuku"qh"vjg"urgkŁecvkqp"cpf"fgvckn"rncpu."cpf"kpfkecvg"vjg"rqukvkqp"qh"vjg"ujggv"urnkegu0"Vjg"qp/ukvg"nc{qwv"qh"vjg"rcpgnu"owuv"dg"fqpg"ceeqtfkpi"vq"vjku"rncp0

2.2.3 Placing the Firestone Geomembrane

Vjg"tqnnu"ctg"wpyqwpf"cpf"wphqnfgf"ceeqtfkpi"vq"vjg"nc{qwv"rncp0"Kpuvcnncvkqp"eqoogpegu"ykvj"vjg"eqxgt/kpi"qh"vjg"godcpmogpvu0"Vjg"Igqogodtcpg"rcpgnu"ctg"wptqnngf"htqo"vjg"vtgpej"vqyctfu"vjg"godcpmogpv"cpf"vjg"Igqogodtcpg"ku"vgo rqtctkn{"Łzgf"vq"cxqkf"kv"unkrrkpi"fqyp0"Gpuwtg"vjcv"pq"rgddngu"qt"ujctr"qdlgevu"ctg"gpvtcrrgf"wpfgt"vjg"Igqogodtcpg."yjkmuv"vjg"ujggvu"ctg"dgkpi"wptqnngf0

Yjkng"kpuvcnnkpi"vjg"ujggvu."ugxgtg"hqnfu"kp"vjg"igqvgzvkng"cpf"fcocig"qh"vjg"uwrrqtv/kpi"uwthceg"owuv"dg"cxqkfgf"vq"gpcdng"vjg"Igqogodtcpg"vq"dg"ocpqgwxtgf"eqttgevn{0"Vjg"Igqogodtcpg"owuv"dg"nkhvgf"łuwvtgtgf"cv"vjg"rgtkogvgt"cnnqykpi"ckt"vq"rnc{"wpfgtpgcvj."vjwu"oqxkpi"vjg"ogodtcpg"qp"cp"ckt"ewujkqp0

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Cnn"Hktguvqpg"Igqogodtcpgu"owuv"tgncz"cv"ngcuv"52/67"okpwvgu"dghqtg"urnkekpi"vjg"ugco"qt"gzgewvkpi"fgvcknu0

2.2.4 Anchoring of the Firestone Geomembrane

Vjg"Igqogodtcpg"owuv"dg"mgrv"kp"rnceg"vq"rtgxgpv"kv"unkrrkpi"fqyp"vjg"godcpmogpv"cpflqt"kv"dgkpi"nkhvgf"d{"vjg"ykpf0"Fgrgpfkpi"wrqp"vjg"ukvwcvkqp."vjg"Igqogodtcpg"ecp"dg"cpejqtgf"kp"xctkqwu"yc{u<

É "Cv"vjg"vqr"qh"vjg"godcpmogpv

É "Cv"cp"kpvgtogfkcvg"rncvhqto

É "Cv"vjg"dqvvqo"

Hcd´UbW\cf]b[

Vjg"cpejqtkpi"owuv"dg"tgcnk|gf"d{"dwt{kpi"vjg"Igqogodtcpg"kp"c"vtgpej"qt"d{"jqnfkpi"kv"kp"rnceg"vjtqwij"

dcnncuvkpi0"Vjg"fkogpukqpu"qh"vjg"vtgpej"fgrgpf"qp"vjg"gzrgevgf"uvtguu0"Vjg"okpkowo"ugevkqp"ujqwnf"dg"2.62"o"z"2.62"o"kp"eqjgukxg"uqknu0"Oqtgqxgt."vjku"ugevkqp"fgrgpfu"qp"vjg"ngpivj"qh"vjg"Igqogodtcpg"dgvyggp"vyq"cpejqt"rqkpvu."vjg"fkuvcpeg"dgvyggp"c"ncorkpi"rqkpv"cpf"vjg"ycvgt"ngxgn."vjg"ykpf"urggf."gve0"

Vjg"Hktguvqpg"Igqogodtcpg"owuv"gzvgpf"cv"vjg"dqvvqo"qh"vjg"vtgpej"qxgt"cv"ngcuv"522"oo0"

Kh"eqpukfgtcdng"uqkn"oqxgogpvu"ctg"gzrgevgf"chvgt"Łnnkpi"vjg"rqpf."vgorqctk{"encorkpi"owuv"dg"rtqxkfgf"cv"vjg"etguv."uq"vjcv"vjg"Hktguvqpg"Igqogodtcpg"ecp"oqxg"ykvjqwv"dgkpi"uwdlgevgf"vq"gzeguukxg"vgpukqp0"Rctvkcn"dcnncuvkpi"kp"vjg"fkvej"ku"koogfkcvgn{"rtqxkfgf"cpf"Łncp"cpejqtkpi"ku"fqpg"cv"c"ncvgt"uvcig0"

Vjg"rqpf"owuv"dg"Łnngf"rtkqt"vq"Łnnkpi"cpf"eqorcevkpi"vjg"cpejqtkpi"vtgpej0"Hknnkpi"cpf"eqorcevkpi"vjg"cpejqtkpi"vtgpej"owuv"dg"rgthqtogf"ykvjqwv"uwdlgevkpi"vjg"Igqogodtcpg"vq"uvtguu"qt"dgkpi"rwpe/vwtgf0"

Kp"qtfgt"vq"cxqkf"oqxgogpv"cpf"nkhvkpi"qh"vjg"Igqogodtcpg"fwtkpi"kpuvcnncvkqp."c"vgorqctk{"dcnncuv"owuv"dg"wugf0"Uwej"dcnncuvkpi"cnuq"hceknkvcvgu"vjg"urnkekpi"qrgtcvkqpu0"Vjg"dcnncuv"ecp"eqpukuv"qh"ucpf"dciu."v{tgu"qt"yqqfgp"rncpmu0"

Vjg"vcdng"dgnqy"ujqyu"c"hgy"rtcevkecn"xcnwgu"hqt"vjg"ugevkqp"kp"eqorcevgf"enc{"uqkn0"

Length of embankment (m)	Section of trench (m²)	
	Low or medium wind speed (< 100 km/hr)	High wind speed (> 100 km/hr)
""" >"5 """	2.38	2.38
""" 5"/"7 """	2.38	2.38
""" 7"/"37 """	2.38	2.47
""" 37"/"62 """	2.47	2.58
""" @"62 """	2.58	2.6;

Cp"cnvgtpcvkxg"wukpi"dcnncuv"ku"rquukdng"kh"pgeguuct{"ogcuwtgu"ctg"vcmgp"hqt"vjg"dcnncuv"pqv"vq"gtqfg"qxgt"vkog0"

IGQVGZ/ IGQOGODTCPG   CPEJQTKPI"   UGEVKQP"   min 1 m   1%

IGQVGZ/ IGQOGODTCPG   CPEJQTKPI"   UGEVKQP"

Hki0"8<"Vqr"cpejqtkpi"kp"vtgpej   Hki0"9<"Vqr"cpejqtkpi"ykvj"dcnncuv.

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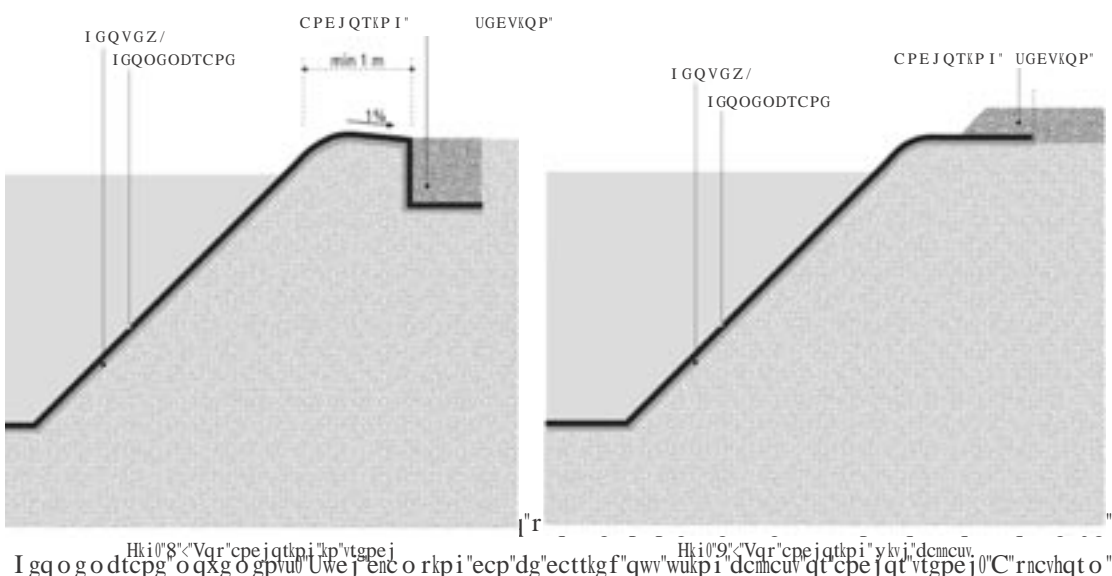
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U C P F"   IGQVGZ/   IGQOGODTCPG   D C N/
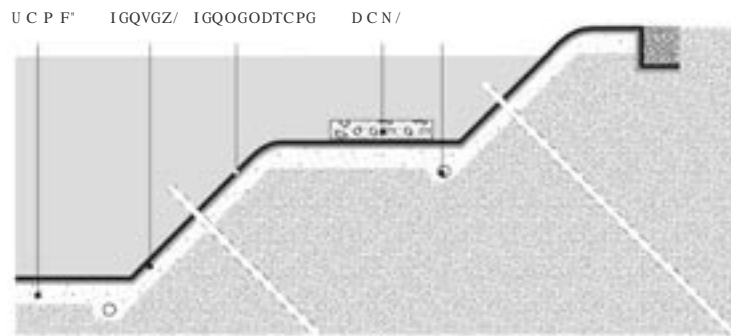
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Cpqvjgt"rtcevkecl"uqnwvkqp"ku"vq"rtqxkfg"c"3"o"fggr"fkvej"cv"vjg"dcug"qh"vjg"godcpmogpv0"Yjgp"vjg"ycvgtrtqqh"nc{gt"ku"ukvwcvgf"cv"c"itgcv"fgrvj."kv"ku"kpfggf"rquukdng"vq"gzvgpf"gpqwij"Igqogodtcpg"cv"vjg"dcug"qh"vjg"rqpf"vq"mggr"vjg"rqpf"nquugu"ykvjkp"ceegrvcdng"nkokvu"*ugg"Łi032+0

13m-28m
D C N/
IGQVGZ/
IGQOGODTCPG
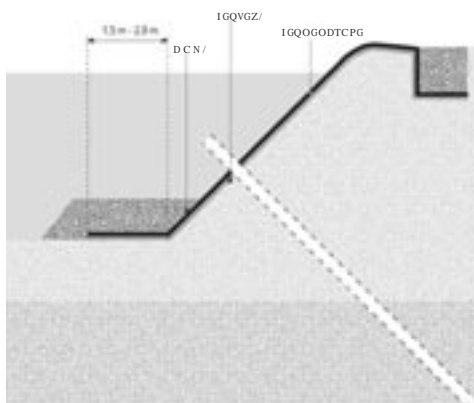
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YCVGTRTQQH'   EQORCEVGF'   IGQVGZ/   IGQOGODTCPG
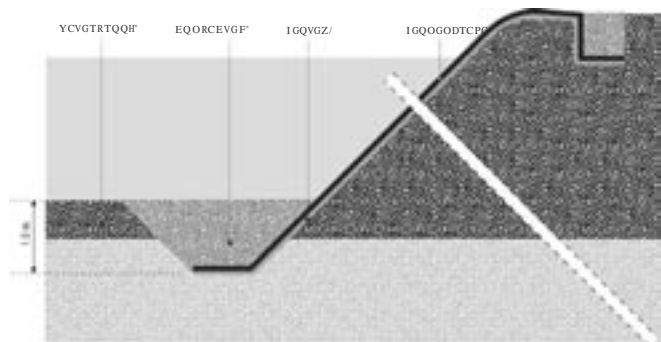
Hki032"<"Dcug"cpejqtkpi"ykvj"vtgpej

2.2.5   Seaming adjoining Firestone Geomembrane panels

Vjg"urnkekpi"qh"cflqkpkpi"rcpgnu"ujqwnf"dg"rgthqtogf"ko ogfkcvgn{"chvgt"vjg"tgnczcvkqp"qh"vjg"Hktguvqpg" Igqogodtcpg0

Cnn"rcpgnu"owuv"dg"kpuvcnngf"ykvjqwv"vgpukqp"cpf"ykvjqwv"oclqt"ytkpmngu."qxgtncrrkpi"d{"cv"ngcuv"372"oo0" Cnn"ugcou"qp"unqrgu"owuv"dg"twp"wr"cpf"fqyp"vjg"unqrg"ykvj"pq"jqtk|qpvcn"ugcou"cnnqygf0

Hqt" uqhv" uwduqknu." c" yqqfgp" dqctf." c" rkgeg" qh" kpuwncvkqp." qt" c" ncokpcvgf" rcpgn" owuv" dg" wugf" wpfgt"vjg" Igqogodtcpg"kp"vjg"ctgc"qh"vjg"urnkeg0"Vjg"rcpgn"ku"oqxgf"d{"ogcpu"qh"c"tqrg"cu"vjg" urnkekpi"rtqeguu"rtqitguugu0

Seaming procedure

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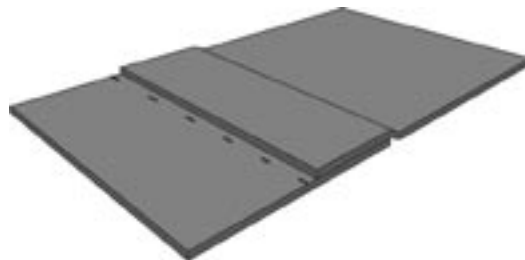
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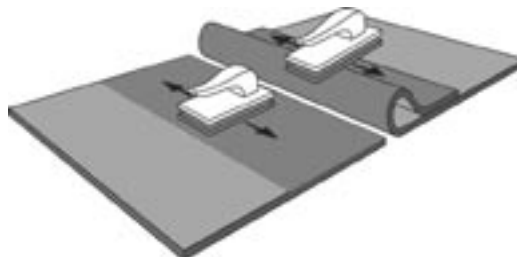
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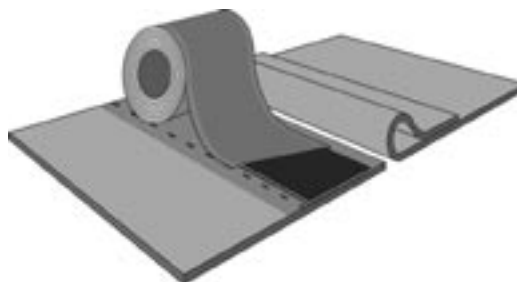
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É˝ Vtko"vjg"vqr"ujggv"cu"pgeguuct{"vq"cuuwtg"vjcv"32"vq"37"oo"qh"vjg"SwkemUgco"Urnkeg"Vcrg"yknn"dg"gzrqugf"qp"vjg"Łpkujgf"urnkeg0
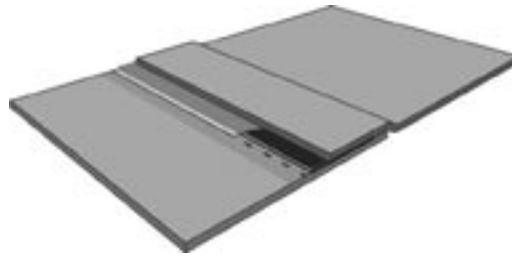
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Hki0"37

GhYd´+´.´Fc``]b[´gd`]WY

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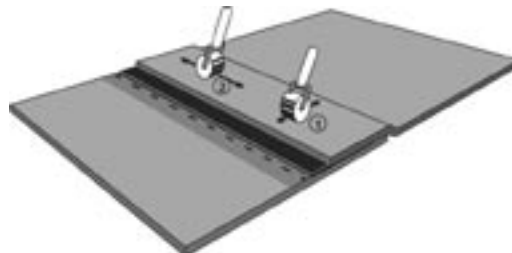
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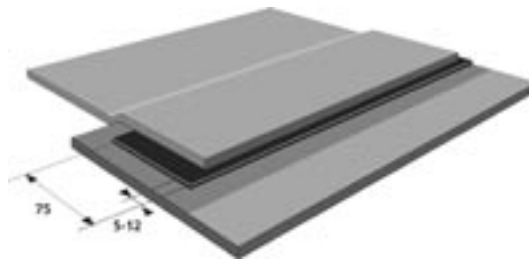
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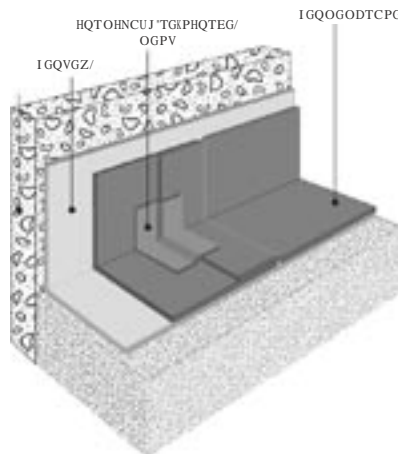
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2.2.6   Protection of the Firestone Geomembrane

Wpfgt" o quv"eqpfkvkqpu."rtqvgevkqp"qh"vjg"Hktguvqpg" I gq o g o dtcpg" y knn"dg"tgswktgf0"Kp"vjg"vcdng"dgnq y "{qw" y knn"Łpf"uq o g"tgeq o o gpfcvkqpu"hqt"vjg"rtqvgevkqp"cickpuv"rqvgpvkcn"fc o cig0

Protection against	Precautions
Ykpf """	É " dcnncuv"cv"vjg"dqvvq o "cpf"qt"qp"unqrgu *kp"ecug"qh"vg o rqtct{"g o rv{kpi+ É" eqttgev"ugevkqp"qh"vjg"cpejqt"vtgpej
Ycxgu""""""""""""""""""""""""""""""""""""""	É " o ejcpkecn"rtqvgevkqp"qh"vjg"g o dcpm o gpv fgrgpfkpi"qp"vjg"unqrg"<"tqem"eqxgtkpi." eqpetgvg"rcxg o gpv."ecuv"eqpetg
Hnqcvkpi"qdlgev"*fgcf" y qqf."dqcvu+""""""""""""""""""""""""	É " u o cnn"rqpfu"<"engcpkpi É "nctigt"rqpfu"<"rtqvgevkqp
Keg """	É " o ejcpkecn"rtqvgevkqp"qh"g o dcpm o gpv"
Cpk o cnu"*tqfgpvu+""""""""""""""""""""""""""""""	É " ncffgtu É" gpenquwtg"ctqwpf"vjg"tgugtxqkt É " o ejcpkecn"rtqvgevkqp"qh"g o dcpm o gpv
Qrgtcvkpi"xgjkengu """""""""""""""""""""""""""""""""""	É " rtqvgevkqp"qh"vjg" I gq o g o dtcpg" y kvj "uqkn"qt" c"ucpf"dgf" *o kp0"42"e o + É" ceeguu"tc o r
Nqecn"vwtdwngpeg" y kvj" y cvgt"urggf """""""""""""""""""""" É " rtqvgevkqp" y kvj"dcnncuv gzeggfkpi"3" o luge0"*kpvgtpcn"cikvcvqt"qt"ecpcn+ ""	

Rtqvgevkqp"qh"vjg"Hktguvqpg" I gq o g o dtcpg"ecp"dg"tgcnk|gf"kp"vjg"hqnnq y kpi" y c{u"<

6UgY.

- É   Ucpf"dgf" *o kpk o w o "vjkempguu"<"422" o o "<"rtqvgevkqp" y kvj "igqvgzvkng"pqv"tgswktgf

- É   I tcxgn" *o kpk o w o "vjkempguu"<"422" o o "<"rtqvgevkqp" y kvj "igqvgzvkng"tgswktgf

- É   Rtghcdtkecvgf" o cvgtkcnu"*vkngu+"<"rtqvgevkqp" y kvj "igqvgzvkng"tgswktgf
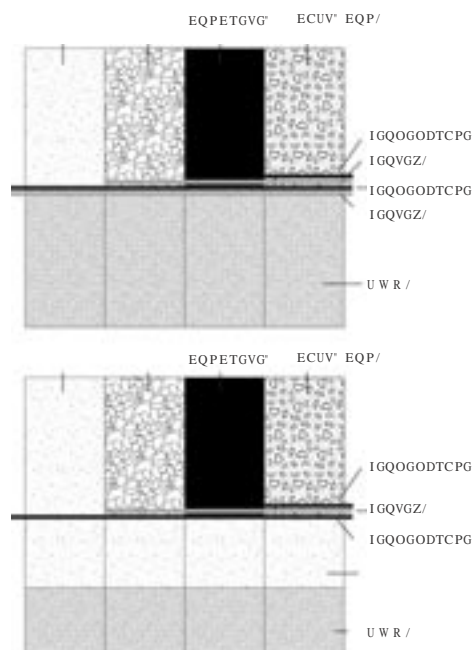
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2.3 Details

2.3.1 General

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2.3.2 Connection to concrete structures

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OGVCN"YCNN"EQPPGEVkQP"

DQPFkPI"

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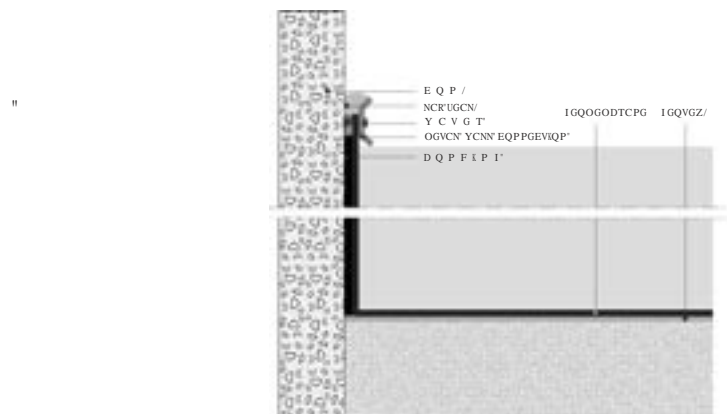
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2.3.3   Flashing of round penetrations

Eqppgevkqpu"vq"nctig"rgpgvtcvkqpu"owuv"dg"ocfg"d{"ogcpu"qh"wpxwnecpk|gf"twddgt"ujggv."Hqto Hncuj."cu"hqnnqyu"<

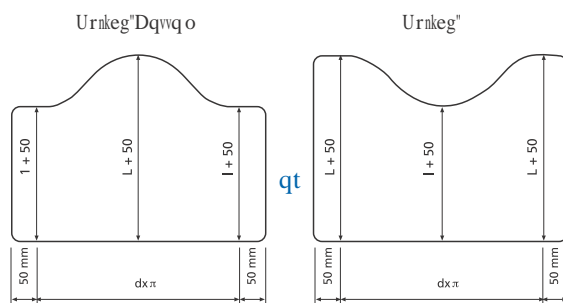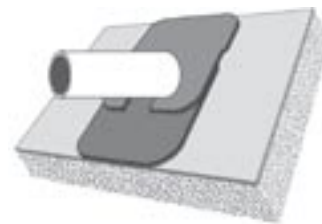- É" Rkrg"pggfu"vq"dg"Łton{"cpejqtgf"cpf"vjg"rkrg"vgorgtcwtg"oc{"pqv"gzeggf":2ÅE

- É"" Ocmg"c"ektewnct"ewvqwv"kp"vjg"Igqogodtcpg"rcpgn."ogcuwtkpi"crrtqzkocvgn{"
  72"'"qh"vjg"rkrg"fkcogvgt

- É" Rwnn"vjg"Igqogodtcpg"qxgt"vjg"rkrg

- É" Rkrg"cpf"Igqogodtcpg"ctg"łcujgf"vqigvjgt"d{"ogcpu"qh"c"rkgeg"qh"Hqto Hncuj

- É" Hkpcnn{."vjg"cuugodn{"ku"ogejcpkecnn{"ugewtgf"ykvj"c"encorkpi"eqnnct

L

d

D

l

d

4"rkgegu

50 mm

D/2

100 mm

100 mm   d   100 mm

Urnkeg"Dqvvqo

Urnkeg

qt

1 + 50

L + 50

1 + 50

50 mm

dxπ

50 mm

L + 50

l+ 50

L + 50

"Hki0"43"<"Hncujkpi"rkrg"rgpgvtcvkqp

GEQVGZ/
GEQOGODTCPG

RTQVGEVKQP"UVTKR"KP
IGQOGODTCPG

E N C O R K P I "

NCR"UGCN/

H Q T O"   URNKEGCFJG/
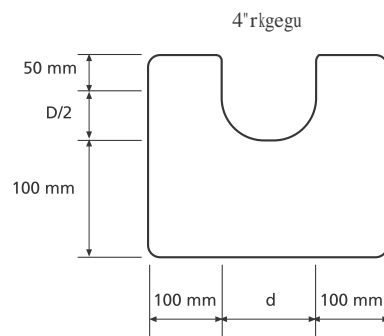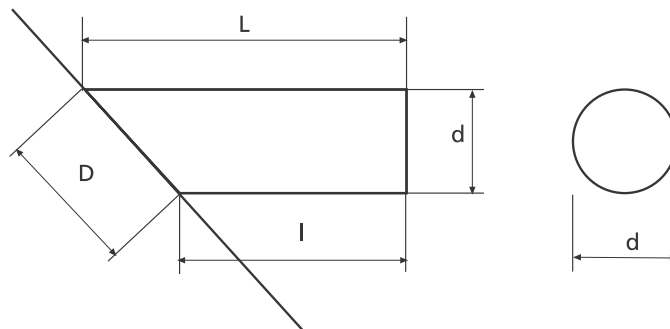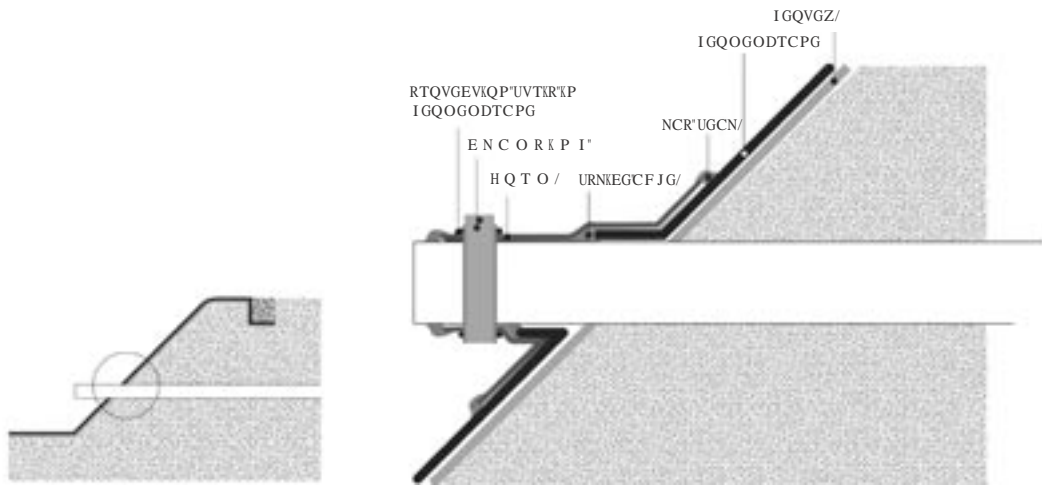
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2.3.4   Drains

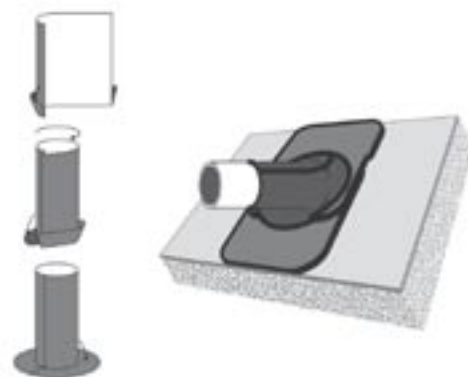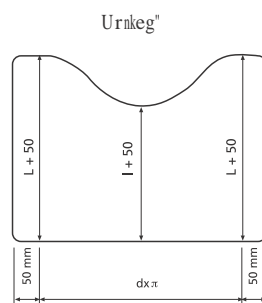Yg"tgeqoogpf"vjcv"c"eqpetgvg"dcug"ku"rtqxkfgf"wpfgtpgcvj"vjg"Igqogodtcpg"ctqwpf"fkuejctigu0"Vjg" Igqogodtcpg"ku"vjgp"ogejcpkecnn{"hcuvgpgf"ykvj"c"encorkpi"u{uvgo"qt"cp"kpugtv"rkgeg"*twddgr.'RXE."hgcf." 000+."ogejcpkecnn{"hcuvgpgf"vq"vjg"eqpetgvg"dcug0"Crrn{"c"ycvgrtqqŁpi"ugcncpv"*Ycvgr"Dnqem+"dgvyggp" vjg"Igqogodtcpg"cpf"vjg"eqpetgvg."cu"kpfkecvgf"kp"vjg"fgvcknu."rtkqt"vq"Łzkpi"qh"vjg"encorkpi"u{uvgo"qt" kpugtv"rkgeg0"Kh"cp"kpugtv"rkgeg"ku"tgswktgf."wug"Hqro"Hncuj"hqt"łcujkpi"vjku"fgvckn0

IGQVGZ/
IGQOGODTCPG
YCVGT"DNQEM"*wpfgr"vjg"Igqogo/
E N C O R K P I"
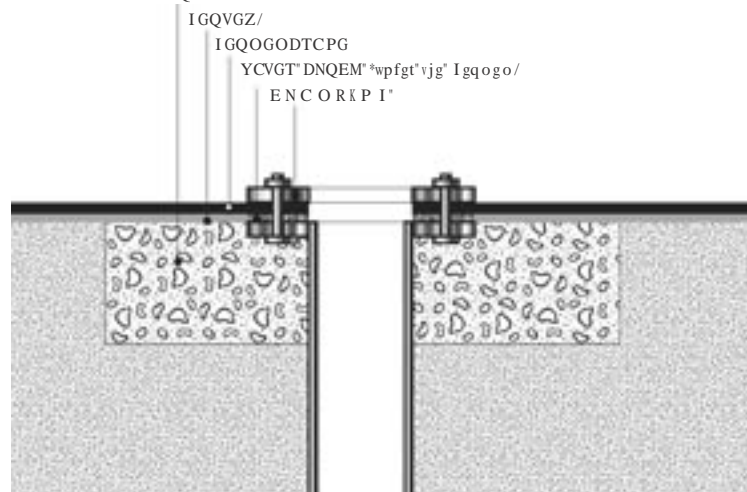
Hki0"45"<"Ycvgr"fkuejctig"ykvj"encorkpi"eqnnct

H Q T O/   IGQVGZ/
NCR"UGCN/   URNKEGCFJG/   IGQOGODTCPG
                    ENCOR/
         YCVGT"DNQEM
         *wpfgr"vjg"Igqogodtcpg+
              K P U G T V"
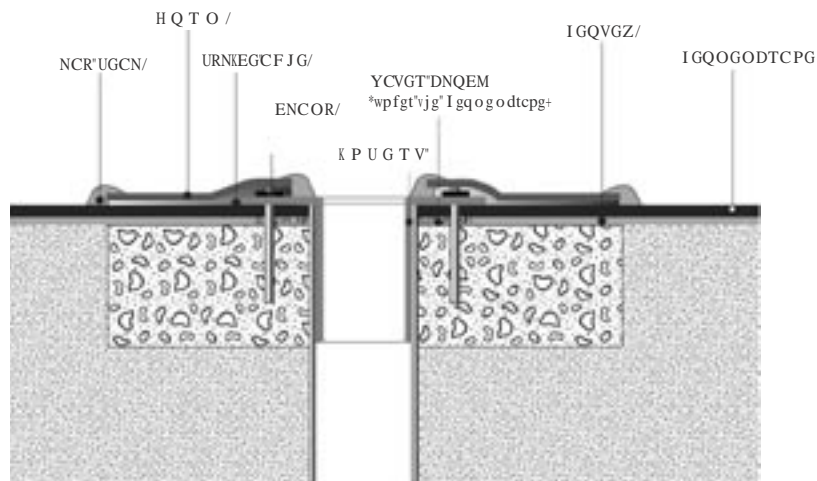
Hki0"46"<"Ycvgr"fkuejctig"ykvj"kpugtv"rkrg

2.3.5 Corners

Kp"o quv"ecugu."vjg"gzeguu"Hktguvqpg" I gq o g o dtcpg"ku"hqnfgf"kp"vjg"eqtpgtu0"J q y gxgt."kh"qpg"qt"dqvj"ycnnu" eqpukuv"qh"eqpetgvg"qt o cuqpt{."ewvvkpi"cyc{"vjg"gzeguu"qh" o g o dtcpg" o c{"dg"tgswktgf"vq"hceknkvcvg"hwnn" cfjgukqp"vq"vjg"ycnn"wruvcpfu0"Kp"vjku"ukvwcvkqp."vjg"eqtpgt"jcu"vq"dg"ugcngf"ykvj"HqtoHncuj"cu"knnwuvtcvgf" dgnqy<

HQTO/
EQP/ IGQOGODTCPG
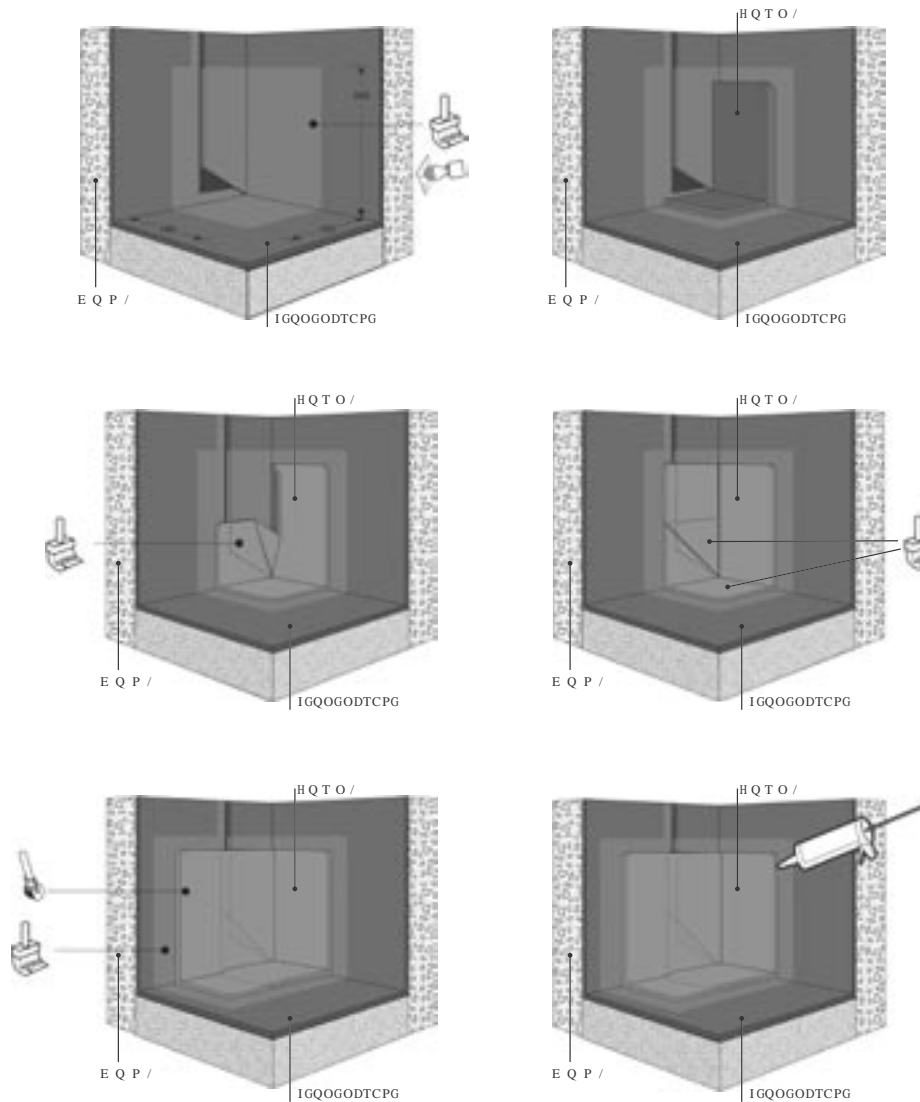
Hki0"47"<"Kpukfg"eqtpgt

Qwvukfg"eqtpgtu"ctg"ugcngf"wukpi"HqtoHncuj"cu"knnwuvtcvgf"dgnqy"<

HQTO/ IGQOGODTCPG
min 50 mm
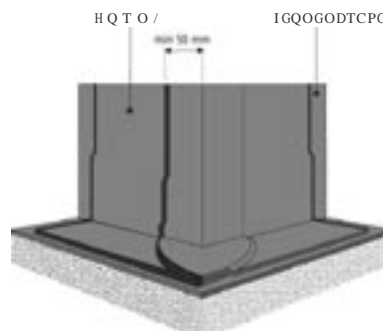
Hki0"48"<"Qwvukfg"eqtpgt

2.4 Miscellaneous

2.4.1 Repair procedure

C"vgct"qt"jqng"kp"vjg" Igqogodtcpg"ecp"dg"tgrcktgf"d{"ogcpu"qh"c"rkgeg"qh"Hqto Hncuj"qt"Hktguvqpg" Igqogodtcpg"eqxgtkpi"vjg"vgct"kp"gxgt{"fktgevkqp"ykvj"cp"qxgtncr"qh"cv"ngcuv"372"o o0"Vjg"rcvej"owuv" dg"cfjgtgf"vq"vjg" ogodtcpg"ykvj"Urnkeg"Cfjgukxg"cu"hqnnqyu<

É" Engcp"vjg"fcocigf"ctgc"d{"uetwddkpi"kv"ykvj"c"enqvj"uqcmgf"ykvj"Urnkeg"Ycuj."vq"tgoqxg"owf"qt"cp{" eqpvcokpcpv"yjkej"yknn"ghhgev"vjg"urnkeg0"Eqttgev"engcpkpi"jcu"dggp"cejkgxgf"yjgp"vjg"Igqogodtcpg" uwthceg"ku"fctm"itg{"kp"eqnqwt"ykvj"pq"uvtgcmkpi0

É" Chvgt"ft{kpi."crrn{"c"eqcv"qh"Urnkeg"Cfjgukxg"d{"ogcpu"qh"c"dtwuj"qpvq"dqvj"uwthcegu"*Igqogodtcpg" cpf"rcvej+0"Ocvg"dqvj"uwthcegu."yjgp"vjg"cfjgukxg"ku"ft{0"Tqnn"vjg"rcvej"d{"ogcpu"qh"c"uknkeqpg"twddgt" tqnngt0

É" Hkpcnn{."crrn{"Ncr"Ugcncpv"vq"rtqvgev"vjg"gzrqugf"urnkeg"gfigu."cu"gzrnckpgf"kp"vjg"urnkekpi"ugevkqp0

2.4.2 Maintenance

Cp"cppwcn"kpurgevkqp"qh"vjg"kpuvcnncvkqp"ku"tgeqoogpfgf"vq"fgvgev"cp{"rtqdngou"yjkej"oc{"gpfcpigt"vjg" fwtcdknkv{"qh"vjg"u{uvgo0"Vjku"kpurgevkqp"rtqeguu"yknn"nkokv"eq.uvu"kh"fcocig"jcu"qeewttgf0

FYWc a a YbXUh]cbg.

É"" Xkuwcn"kpurgevkqp"qh"vjg" Igqogodtcpg."urnkegu."eqppgevkqpu"cpf"vjg"cpejqtkpi

É"" Ogcuwtgogpv"qh"vjg"ngcm"łqy"tcvg"cpf"oqpkvqtkpi"qh"ycvgt"ngxgn

É"" Ejgem"cnn"icu"ftckpcig"xgpvu

É"" Cxqkf"cp{"qxgtłqykpi"qh"vjg"rqpf

É"" Ejgem"vjg"ejgokecn"eqorqukvkqp"cpf"vjg"vgorgtcvwtg"qh"vjg"nkswkfu"eqokpi"kpvq"eqpvcev" ykvj"vjg" Igqogodtcpg

É"" Ejgem"vjg"rtqvgevkqp"qh"vjg"ujggv."kh"cp{

2.4.3 Safety

Urgek"łe"rtgecwvkqpu"ctg"vq"dg"vcmgp"vq"cuuwtg"uchgv{"qh"rgqrng"cpf"cpkocnu"qp"ukvg."gurgekcnn{"yjgp"vjg" rqpf"jcu"dggp"kpuvcnngf"enqug"vq"cp{"jcdkvcvkqp"cpf"vqwtkuv"ctgcu0

Vjg"hqnnqykpi"rtgecwvkqpu"ujqwnf"dg"vcmgp"<

É"" Ncffgt"qt"enkodkpi"tqrg

É"" Nqy"itcfkgpv"qh"godcpmogpv"*>"513+

É"" Kpvgtogfkcvg"rncvhqto"cv"nqecvkqp"ykvj"nkokvgf"fgrvj"qh"tgugtxqkt

É"" Gpenquwtg"ctqwpf"vjg"rtqlgev

Attachment 1

Vjg"Hktguvqpg"Nkpkpi"U{uvgo"wugu"c"eqorngvg"tcpig"qh"ocvgtkcnu"kpenwfkpi"vjg"Hktguvqpg"GRFO"Igqogo/
dtcpg."cfjgukxgu."vcrg."ugcncpvu."engcpkpi"rtqfwevu"cpf"rtghcdtkecvgf"ceeguuqtkgu"kp"qtfgt"vq"iwctcpvgg"vjg
jqoqigpgkv{"qh"vjg"u{uvgo0

Membrane

É""**:]fYgcbY;YcYaVfUbY.**"vjg"ockp"eqorqpgpv"qh"vjg"u{uvgo"eqpukuvu"qh"vjg"Hktguvqpg"GRFO"
Igqogodtcpg0"Vjg"Igqogodtcpg"ku"ocpwhcevwtgf"d{"ecngpfgtkpi"cpf"xwnecpkukp0"Vjg"ujggv"jcu"c
vjkempguu"qh"3.24"/"3.36"qt"3.74"oo0"Vjg"3.24"oo"vjkem"ujggv"ku"urgekcn{"fgukipgf"hqt"crrnkecvkqp"kp
fgeqtcvkxg"cpf"ncpfuecrg"rqpfu0

¡¨"**:cfa:`Ug\.**ugnh/xwnecpkukpi"twddgt"uvtkru"yjkej"ecp"dg"ujcrgf"cpf"cfcrvgf"kp"c"ɫgzkdng"yc{"vqkttgiwnct
ujcrgu"uwej"cu"eqtpgtu."rkrgu."gve0

Adhesives and pressure sensitive tape

¡¨"**Gd`]WY5X\Yg]jY.**"dwv{n"dcugf"eqpvcev"cfjgukxg."wugf"hqt"Łgnf"urnkekpi"qh"Hktguvqpg"Igqogodtcpg"
cpf"HqtoHncuj0

¡¨"**6cbX]b[5X\Yg]jY.**pgqrtgpg"dcugf"eqpvcev"cfjgukxg"wugf"hqt"dqpfkpi"Igqogodtcpg"ujggvu"qt
HqtoHncuj"vq"pqpIgqogodtcpg"uwthcegu"*yqqf."ogvcn."eqpetgvg"cpf"qvjgtu+0

¡¨"**Ei]W_GYUaGd`]WYHUdY.**"fqwdngukfgf"dwv{n"dcugf"cfjgukxg"vcrg"hqt"urnkekpi"Hktguvqpg"
Igqogodtcpg"rcpgnu0

Cleaning products

¡¨"**Gd`]WYKUg\.**"engcpkpi"rtqfwev"wugf"fwtkpi"vjg"rtgrctcvkqp"qh"c"Hktguvqpg"Igqogodtcpg"ujggv."dghqtg"
crrn{kpi"vjg"Urnkeg"Cfjgukxg0"Vjku"rtqfwev"oc{"pqv"dg"wugf"hqt"vjg"crrnkecvkqp"qh"SwkemUgco"Urnkeg"
Vcrg0

¡¨"**Ei]W_Df]aYD`ig.**"rtqfwev"hqt"vtgcvkpi"vjg"Hktguvqpg"Igqogodtcpg"ujggv"rtkqt"vq"crrn{kpi"vjg"
SwkemUgco"Urnkeg"Vcrg0

Sealants

¡¨"**@UdGYU`Ubh.**"twddgt"dcugf"ugcncpv"hqt"ugcnkpi"urnkeg"gfigu."yjgp"Urnkeg"Cfjgukxg"ku"wugf0

¡"**KUhYf6`cW_GYU`.**"dwv{n"dcugf"ugcncpv."hqt"ocmkpi"c"ycvgtrtqqh"ugcn"yjgp"gzgewvkpi"ycvgtrtqqⱢpi"
fgvcknu

Accessories

¡¨"**HYf a]bUh]cb6Uf.**"cnwokpkwo"rtqⱢng"hqt"vgtokpcvkpi"vjg"Hktguvqpg"Igqogodtcpg"ujggv"cv"vjg"vqr
cickpuv"cp"wrtkijv"ycnn"0

Ocvgtkcnu"htqo"qvjgt"ocpwhcevwtgu."kpenwfkpi"hcuvgpgtu."ftckp"kpugtv"rkgegu."ogvcn"rtqⱢngu."gve0."
yjkej"ctg"pqv"fguetkdgf"kp"vjgug"vgejpkecn"iwkfgnkpgu."ecp"dg"wugf"yjgp"crrtqxgf"d{"Hktguvqpg0

Technical Data Sheets

É"""""" Hktguvqpg" I gq o g o dtcpg

É"""""" Hqt o Hncu j

É"""""" S wkemUgc o "Hqt o Hncu j

É"""""" Urnkeg"C f j gukxg

É"""""" Dqp fkp i "C f j gukxg

É"""""" S wkemUgc o "Urnkeg"Vc r g

É"""""" Urnkeg" Y cu j

É"""""" S wkemRtk o g "Rnwu

É"""""" Nc r "Ugcncpv" J U

É"""""" Y cvgt"Dnqem"Ugcn

É"""""" Vgt o kpcvkqp"Dct

Firestone Geomembrane

1. Description

Vjg" Hktguvqpg" Igqogodtcpg" ku" c" ewtgf" ukping/rn{" u{pvjgvke" twddgt" ogodtcpg" ocfg" qh" gvj{ngpg/" rtqr{ngpg/fkgpg"vgtrqn{ogt"*GRFO+0"Kv"ku"cxckncdng"kp"c"xctkgv{"qh"vjkempguugu"cpf"rcpgn"uk|gu0"Fgrgpfkpi" qp"vjg"fkogpukqp"qh"vjg"nkpgt."vjg"ycvgtrqqᴌpi"uwthceg"oc{"dg"ugconguu0"Kp"qvjgt"ukvwcvkqpu."ugcou"ecp" dg"ocfg"wukpi"c"ugnh/cfjgukxg"vcrg0

Vjg"3.24"oo"vjkem"Hktguvqpg"GRFO" Igqogodtcpg"ku"urgekᴌecnn{"fgukipgf"hqt"fgeqtcvkxg"rqpf"crrnkec/ vkqpu0"Kv"ku"eqoogtekcnk|gf"wpfgt"vjg"vtcfg"pcog"õ**Firestone Pond Liner™**ö0"Dgecwug"qh"kvu"urgekᴌe" hqtowncvkqp"cpf"rtqfwevkqp"rtqeguu."**only the Firestone Pond Liner™ membrane is guaranteed to be compatible with aquatic life**"kp"ceeqtfcpeg"ykvj"vguvkpi"tgrqtvu"rwdnkujgf"d{"vjg"Ycvgt"Tgugctej" Egpvtg"kp"vjg"WM0

2. Preparation

DᴌcᴜXᵢWhˑ." Cnnqy" vjg" ogodtcpg" vq" tgncz" hqt" crrtqzkocvgn{" 52" okpwvgu" dghqtg" urnkekpi0 **GᵢVghfᴜhYˊ.** Vjg"uwduvtcvg"pggfu"vq"dg"uoqqvj."ft{"cpf"htgg"qh"ujctr"qdlgevu."qkn."itgcug"cpf"qvjgt"ocvgtkcnu" vjcv"oc{"fcocig"vjg"Igqogodtcpg0

3. Application

Kpuvcnn"vjg"Hktguvqpg"Igqogodtcpg"kp"ceeqtfcpeg"ykvj"ewttgpv"urgekᴌecvkqpu"cpf"fgvcknu0

4. Coverage

Vjg"fkogpukqp"qh"vjg"Igqogodtcpg"ctg"ecnewncvgf"vq"eqxgt"vjg"dcug"qh"vjg"tgugtxqkt."unqrgu"cpf"cpejqt" vtgpejgu."kpenwfkpi"ugco"qxgtncru0

5. Characteristics

Vjg"Hktguvqpg"Igqogodtcpg"ku"c"twddgt"ocvgtkcn"ykvj"vjg"hqnnqykpi"rtqrgtvkgu<

D\mgᴶWU`	É" Gncuvqogtke"ogodtcpg"ykvj"c"iqqf"eqodkpcvkqp"qh"jkij"gncuvkekv{"cpf"vgpukng"" uvtgpivj
" "	É" Ycvgt/tgukuvcpv
" "	É" Vgorgtcvwtg"uvcdng"htqo"/67àE"vq"352àE
" "	É" Tgockpu"kvu"gncuvkekv{"cv"nqy"vgorgtcvwtg"cpf""tgukuvu"vq"vgorgtcvwtg"ujqemu"wr"vq" 472àE0
" "	É" Gzegnngpv"tgukuvcpeg"vq"cnmcnk"tckpu."ugcu""tgukuvcpv"vq"qkn"rtqfwevu0"Eqpvcev"ykvj" uqog""mkpf"qh"qknu."rgvtqngwo"rtqfwevu."jqv"dkvwogp"cpf"itgcug"owuv"dg"cxqkfgf
" "	É" Gzegnngpv"tgukuvcpeg"vq"W0X0"tcfkcvkqp"cpf""q|qpg"eqpegpvtcvkqp
HYW\bᴶWU`	É"" Dcug" twddgt
" "	É"" Eqnqwt" dncem
" "	É"" Uqnxgpvu" pqpg
" "	É"" Uqnkfu"*'+" 322
" "	É"" Uvcvg" ewtgf
" "	É"" Uvqtcig" Uvqtg"vjg"ogodtcpg"kp"c"ft{"rnceg"wpvkn"wug

6. Technical Specifications

1. Physical Properties	Method	Result	Unit
É″ UrgekŁe″ygkijv″	fktgev″ogcuwtgogpv″	3372″	milo⁵
É″ Ujqtg″C″fwtqogvgt″	CUVO/F/4462″	87″Õ″32″	/
É″ Vgpukng″uvtgpivj″	WGCve″	″	″
″ ″ /″wpcigf″	″	×″:.2″	Ploo⁴
″ ″ /″jgcv″cigf″,″	″	×″:.2‴	Ploo⁴
É″ Gnqpicvkqp″	WGCve″	″	
″ ″ /″wpcigf″	″	×″522″	′
″ ″ /″jgcv″cigf″,″	″	×″522‴	′
É″ Vgct″tgukuvcpeg″	WGCve″	33.9″	Ploo
É″ Fkogpukqpcn″uvcdknkv{,,″*htgg+″	WGCve″	Ö″2.7″	′
É″ Nqy″vgorgtcvwtg″łgzkdknkv{″	FKP″75583″	etcem″htgg″cv/″52″	àE″
É″ Q|qpg″tgukuvcpeg″	FKP″9:86″	etcem″htgg″	/
É″ W0X0″tgukuvcpeg″	CUVO″I″75/:6″	etcem″htgg″	/
É″ Uvcvke″kpfgpvcvkqp″	WGCve″		
″ ″ /″eqpetgvg″	″	N₆	
É‴ Rggn″tgukuvcpeg″	WGCve″	″	
″ ″ /″eqpetgvg″	″	49.:″	P

,″ :6″fc{u″cv″2à″E0‴/″, ,″46″jqwtu″cv″322à″E0

2. Packaging				
Thickness (in)	Thickness (mm)	Width (m)	Length (m)	Weight (kg/m²)
0262$″	3.24″	8.32/9.84/;.37/34.42/37.47″	52.72/67.97/83″	3.47
0267$″	3.36″	5.27/8.32/9.84/;.37/34.42/37.47″	52.72/67.97/83″	3.63
0282$″	3.74″	5.27/8.32″	52.72″	3.;7″

Pqvg<″Urgekcn″rcpgn″uk|gu″ctg″cxckncdng″wrqp″tgswguv0

7. Precautions

Vcmg″ectg″yjgp″oqxkpi.″vtcpurqtvkpi″qt″jcpfnkpi″vq″cxqkf″uqwtegu″qh″rwpevwtgu″cpf″rj{ukecn″fcocig0″Kuqncvg″ycuvg″rtqfwevu.″uwej″cu″rgvtqngwo″rtqfwevu.″itgcugu.″qknu″*okpgtcn″cpf″xgigvcdng+″cpf″cpkocn″hcvu″htqo″vjg″Igqogodtcpg0

FormFlash

1. Description

Hktguvqpg"Hqto Hncuj"ku"c"ugnh/ewtkpi"twddgt"uvtkr."cfcrvcdng"vq"kttgiwnct"ujcrgu"cpf"fgukipgf"vq"łcuj"vjg"u{uvgo"fgvcknu"kp"ceeqtfcpeg"ykvj"Hktguvqpg"urgekĿecvkqpu0

2. Preparation

DfcX i Wh´. Fwtkpi"eqnf"ygcvjgt"*>"37àE"+"vjg"Hqto Hncuj"oc{"dg"kpuvcnngf"wukpi"c"jgcv"iwp"vq"kortqxg"kvu"yqtmcdknkv{0

G i VghfUhY´. Owuv"dg"engcp."ft{."uoqqvj."htgg"qh"ujctr gfigu."nqqug"qt"hqtgkip"ocvgtkcnu."qkn."itgcug"cpf"ejgokecn"rtqfwevu"vjcv"eqwnf"chhgev"vjg"ocvgtkcn0

3. Application

Tghgt"vq"Hktguvqpg"kpuvcnncvkqp"kpuvtwevkqpu"hqt"łcujkpi0"Vjg"Hqto Hncuj"ocvgtkcn"ku"vq"dg"cfjgtgf"wukpi"Urnkeg"Cfjgukxg0"Vjg"gfig"qh"gcej"urnkeg"jcu"vq"dg"rtqvgevgf"ykvj"Ncr"Ugcncpv0

4. Characteristics

D\mgJWU`

- É" gcukn{"cfcrvcdng"vq"kttgiwnct"ujcrgu"cpf"uwthcegu
- É" uwrgtkqt"ygcvjgtkpi"ejctcevgtkuvkeu
- É" ugnh/ewtkpi"twddgt"ocvgtkcn."ykvj"ukoknct"ejctcevgtkuvkeu"cu"vjg"Hktguvqpg" Igqogodtcpg"chvgt"34"oqpvju

HYW\bJWU`

		Width (cm)	Length (m)	Packaged	Weight (kg)
É""	Dcug	twddgt			
É""	Eqnqwt	dncem			
É""	Uqnxgpvu	pqpg			
É""	Uqnkfu"* ' +"	322			
É""	Uvcvg	wpewtgf			
É"	Vjkempguu"*oo+"	3.62			
É""	Rcemcikpi				
"	"	37"/"52"	52.7"	4"tqnnulevp"	Õ":/38
"	"	67"/"82"	52.7"	3"tqnnlevp"	Õ"46/54
É""	UvqtciglUjgnh"Nkhg cv"vgorgtcvwtgu"			34"oqpvju."kh"uvqtgf"kp"qtkikpcn"wpqrgpgf"ectvqp"dgvyggp"37àE"cpf"47àE	

5. Precautions

Mggr"cyc{"htqo"jgcv"uqwtegu"fwtkpi"uvqtcig"cpf"kpuvcnncvkqp0"Fq"pqv"gzrqug"vq"vjg"uwpnkijv"yjgp"uvqtgf0

QuickSeam FormFlash

1. Description

SwkemUgco"Hqto Hnncuj"eqpukuvu"qh"c"44;"o o "*;ö+"qt"527" o o "*34ö+"wpewtgf"Hqto Hnncuj"hcevqt{"ncokpcvgf" vq"SwkemUgco "Vcrg0"Vjg"uvtkr"ku"fgukigpgf"vq"łcuj"kpukfg"cpf"qwvukfg"eqtpgtu."rkrgu."rgpgvtcvkqpu"cpf"qvjgt" crrnkecvkqpu"cu"urgekŁgf"kp"vjg"Hktguvqpg"urgekŁecvkqpu"cu"cp"cnvgtpcvkxg"vq"fgvcknu"ykvj"Hqto Hnncuj0"Rngcug" eqpvcev"Hktguvqpg"Vgejpkecn"Fgrctvo gpv"hqt"hwtvjgt"kphqto cvkqp"cdqwv"vjg"wug"qh"vjku"rtqfwev0

2. Preparation

Vjg"Igqo go dtcpg"uwthcegu"cpflqt"o cvkpi"uwthcegu"o wuv"dg"rtgrctgf"ykvj"SwkemRtko g"Rnwu."wukpi"c"Swkem/ Uetwddgt"'vqqn0"Wug"qh"qvjgt"rtqfwevu"ku"pqv"cnnqygf0"Tguvqtg"vjg"rtqfwev"vq"tqo"vgo rgtcwtg"rtkqt"vq"wug" kh"gzrqugf"vq"vgo rgtcwtgu"dgnqy"37àE"hqt"rtqnqpigf"rgtkqfu0

3. Application

Qp"enqwf{"fc{u"ykvj"c"odkgpv"vgo rgtcwtg"dgnqy"37àE."vjg"wug"qh"c"jgcv"iwp"ku"tgeqo o gpfgf"vq"ycto "vjg" SwkemUgco "Hqto Hnncuj"cpf"vq"gpuwtg"iqqf"hqto cbknkv{0"Qp"uwpp{"fc{u."rtg/jgcvkpi"qh"vjg"rtqfwev"ku"wuwcnn{" pqv"pgeguuct{0"SwkemUgco "Hqto Hnncuj"ku"vq"dg"crrnkgf"cu"rgt"vjg"Hktguvqpg"urgekŁecvkqpu"cpf"fgvcknu0

4. Coverage

Kp"ceeqtfcpeg"ykvj"ngpivj"qh"fgvckn0

5. Characteristics

HYW \bJWU`		9D8A ˙ : `Ug \]b [·············	E i]W_GYU a ˙HUdY
"	É """ Dcug """"""""""""""""""""" GRFO """""""""""""""""""""		Twddgt"rqn{o gtu
"	É """ Eqnqwt """"""""""""""""""""" Dncem """""""""""""""""""""		Dncem
"	É """ Uqnxgpvu """"""""""""""""""""" Pqpg """""""""""""""""""""		Pqpg
"	É """ Uqnkfu"* ' +"""""""""""""""" 322 """""""""""""""""""""		322
"	É """ Uvcvg """"""""""""""""""""" Wpewtgf """""""""""""""""""""		Ewtgf
"	É """ Vjkempguu"*o o +"""""" 3.8 """"""		2.8
"	É """ Ykfvj"*o o+""""""""""" 44;"/"527 """"""""""""""""""""""		457"/"533
"	É """ Rcemcikpi """""""""""""""" 3704" o "*72ø+"tqnnu """""""""""""""""""""" 4"tqnnu"rgt"ectvqp"*;ö+"/"3"tqnn"rgt"ectvqp"*34ö+		
"	" Pqvg< SwkemUetwddgt" rcfu" cpf" jcpfngu" ctg" kpenwfgf" kp" gcej" ectvqp0" Swcpvkvkvku"xct{ """""fgrgpfkpi"qp"vjg"SwkemUgco "rtqfwev0		
"	É """ Uvqtcig """"""""""""""""""""" Uvqtg" kp" qtkikpcn" wpqrgpgf" ectqp" cv" vgo rgtcwtgu" dgvyggp"37ÅE"cpf"47ÅE0"Mggr"vjg"o cvgtkcn"qwv"qh"fktgev uwpnkijv"wpvkn"tgcf{"hqt"crrnkecvkqp0		
"	É """ U j e n h" nkhg 34" o qpvju." yjgp" uvqtgf" kp" cdqxg/o gpvkqpgf" eqpfkvkqpu0" Xgtkh{ rtqfwevkqp"fcvg"qp"gcej "tqnn0"Ujgnh"nkhg"yknn"dg"tgfwegf"kh gzrqugf"vq"jkijgt"vgo rgtcwtgu0		

Splice Adhesive (SA-1065)

1. Description

Hktguvqpg"Urnkeg"Cfjgukxg"ku"c"dwt{n"dcugf"eqpvcev"cfjgukxg"fgukipgf"hqt"Łgnf"urnkekpi"qh"Hktguvqpg"Igqogo/dtcpg"rcpgnu"cpf"HqtoHncuj"vq"Hktguvqpg"Igqogodtcpg0

2. Preparation

DfcXiWh´. Uvkt"vjg"cfjgukxg"dghqtg"cpf"fwtkpi"wug0"Tguvqtg"vjg"cfjgukxg"vq"tqqo"vgorgtcvwtg"rtkqt"vq"wug."kh"gzrqugf"vq"vgorgtcvwtgu"nqygt"vjcp"37àE0

GiVghfUhY´. Vjg"cfjgtgf"uwthcegu"owuv"dg"enccpgf"ykvj"Urnkeg"Ycuj"wukpi"eqvvqp"enqvju0

3. Application

Crrn{"kp"c"vjkem."gxgp."uoqqvj"eqcv"qp"dqvj"uwthcegu"ykvj"c"97"vq"322"oo"ykfg"uqnxgpv"tgukuvcpv"rckpv"dtwuj0"Fq"pqv"wug"ektewnct"oqvkqpu"hqt"crrn{kpi"Urnkeg"Cfjgukxg"*pq"rckpv"tqnngtu+"cpf"cnnqy"vjg"cfjgukxg"vq"Łcuj"qhh"rtkqt"vq"ocvkpi"vjg"uwthcegu0"Kp"eqnf"ygcvjgt."oqkuvwtg"eqpvcokpcvkqp"qh"vjg"cfjgukxg"ecp"qeewt"yjgp"eqpfgpucvkqphtquv"hqtou"qp"vjg"cfjgukxg"yjkng"vjg"uqnxgpvu"Łcuj"qhh0"Hqt"hwtvjgt"kpuvtwevkqpu"tghgt"vq"vjg"urnkekpi"ugevkqp0

4. Coverage

C"wpkhqto"crrnkecvkqp"ku"tgswktgf"vq"cxqkf"okzgf"tguwnvu0"Vjkppkpi"qh"vjg"cfjgukxg"ku"pqv"cnnqygf0"C"eqxgtcig"tcvg"qh"37"nkp0oligcn."hqt"c"522"oo"ykfg"urnkeg"ctgc."qp"dqvj"ukfgu."ku"tgeqoogpfgf0

5. Characteristics

D\mgJWU`		
É gzegnngpv"oqkuvwtg"tgukuvcpeg		
" " É gzegnngpv"tgukuvcpeg"vq"jgcv"cpf"eqnf		
" " É gzegnngpv"itggp"vcem		
HYW\bJWU`	É"" Dcug	u{pvjgvke"rqn{ogtu
" " É"" Eqnqwt	dncem
" " É"" Uqnxgpvu	jgzcpg."vqnwgpg."z{ngpg
" " É"" Uqnkfu"*'+	48"*okp+
" " É"" Xkuequkv{"*er+	40;22/50922
" " É" Ygkijvlicnnqp"*mi+	5.55
" " É"" UrgekŁe"itcxkv{	2.:98
" " É"" Hncuj"Rqkpv"*àE+	/39.9
" " É"" Rcemcikpi	3"icnnqp"*5.9:"n+
" " É"" UvqtciglUjgnh"nkhg	;oqpvju"kh"uvqtgf"kp"qtkikpcn"ugcngf"eqpvckpgt"cv"vgorgtcvwtgu"
		dgvyggp"37àE"cpf"47àE0
" "	" ▪	Qpeg"qrgpgf."wug"vjg"cfjgukxg"ykvjkp"6":jqwtu

6. Precautions

Hncoocdng0"Mggr"cyc{"htqo"uqwtegu"qh"kipkvkqp0"Fq"pqv"uoqmg"yjgp"wukpi0"Uvqtg"cpf"wug"vjg"ocvgtkcn"kp"ygnn"xgpvkncvgf"ctgcu0"Oc{"ecwug"ugpukvkxkv{"d{"kpjcncvkqp0"Cxqkf"eqpvcev"ykvj"umkp"cpf"g{gu0

Bonding Adhesive (BA-2004)

1. Description

Hktguvqpg" Dqpfkpi" Cfjgukxg" ku" c" pgqrtgpg/dcugf" cfjgukxg" fgukipgf" hqt" dqpfkpi" Hktguvqpg" Igqogodtcpg"vq"yqqf."ogvcn."ocuqpt{"cpf"qvjgt"ceegrvcdng"pqp"twddgt"uwduvtcvgu0

2. Preparation

DfcXiWh˙."Uvkt"vjg"cfjgukxg0"Tguvqtg"vjg"cfjgukxg"vq"tqqo"vgorgtcvwtg"rtkqt"vq"wug"kh"gzrqugf"vq"eqnf" vgorgtcvwtgu"*>"37àE0+0

GiVghfUhY˙."Uwthcegu"vq"yjkej"Dqpfkpi"Cfjgukxg"ku"vq"dg"crrnkgf"owuv"dg"engcp."uoqqvj."ft{"cpf"htgg"qh" ujctr"gfigu."nqqug"ocvgtkcnu."qkn."itgcug"cpf"qvjgt"eqpvokpcpvu0"Vjg"ocvkpi"uwthceg"qh"vjg"Igqogodtcpg" ujcnn"dg"engcpgf"ykvj"c"dtwuj"qt"engcp"tci0

3. Application

Crrn{"vjg"cfjgukxg"kp"cp"gxgp."uoqqvj"eqcv"qp"dqvj"uwthcegu"ykvj"c"uqnxgpv/tgukuvcpv"rckpv"tqnngt"cpf"cxqkf" inqdu"cpf"rwffngu0"Cnnqy"cfjgukxg"vq"łcuj"qhh"wpvkn"vcem{"*37"vq"67"okpwvgu+0"Vguv"vjg"cfjgukxg"hqt"kvu"ft{pguu." wukpi"vjg"rwuj/qwej"vguv"rtqegfwtg0"Kh"vjg"cfjgukxg"ku"tgcf{."ocvg"dqvj"uwthcegu"cpf"rtguu"ykvj"c"dtwuj0

4. Coverage

Vjg"cfjgukxg"owuv"dg"crrnkgf"cv"c"wpkhqto"tcvg"vq"dqvj"vjg"dcem"qh"vjg"Igqogodtcpg"cpf"vjg"uwduvtcvg0"Kh" vjg"crrnkecvqt"ecp"rnceg"c"łpigt"qt"jcpf"fktgevn{"qp"vjg"cfjgukxg"ykvjqw"hggnkpi"uqog"fgitgg"qh"vcemkpguu." vjg"crrnkecvkqp"ku"vqq"vjkp"cpf"vjg"cfjgukxg"ujqwnf"dg"tg-crrnkgf0"Vjkppkpi"qh"vjg"cfjgukxg"ku"pqv"cnnqygf0 Vjg"pqtocn"eqxgtcig"tcvg"ku"7"vqv"8"o²"dqvj"ukfgu."rgt"icnnqp0

5. Characteristics

D\mgJWU`"	É'	gzegnngpv"tgukuvcpeg"vq"cigkpi
" "	É'	gzegnngpv"cfjgukxg"uvtgpivj"vq"fkhhgtgpv"crrnkecvkqpu
" "	É'	iqqf"tgukuvcpeg"vq"jgcv."eqnf"cpf"ycvgt
HYW\bJWU`"	É''	Dcug"		rqn{ejnqtqrtgpg
" "	É''	Eqnqwt"		codgt
" "	É''	Uqnxgpvu"		vqnwgpg."cegvqpg."jgzcpg
" "	É''	Uqnkfu"*'+"		45"*okp+
" "	É''	Xkuequkv{"*er+"		40522/50222
" "	É''	Ygkijv"Icnnqp"*mi+"		5.4
" "	É''	UrgekŁe"itcxkv{"	2.:6
" "	É''	Hncuj"Rqkpv"*àE+"	>"/39.9
" "	É''	Rcemcikpi"	7"icnnqp"rckn
" "	É''	UvqtcigJUjgnh"nkhg"34" oqpvju"kh"uvqtgf"kp"qtkikpcn"ugcngf"eqpvckpgt"cv"vgorgt- vwtgu"" " dgvyggp"37à"cpf"47àE0		
" "	" "	Qpeg"qrgpgf."wug"vjg"cfjgukxg"ykvjkp"6:"jqwtu0	

6. Precautions

Hncoocdng0"Mggr"cyc{"htqo"uqwtegu"qh"kipkvkqp0"Fq"pqv"uoqmg"yjgp"wukpi0"Uvqtg"cpf"wug"vjg"ocvgtkcn"kp" ygnn"xgpvkncvgf"ctgcu0"Oc{"ecwug"ugpukvkxkv{"d{"kpjcncvkqp0"Cxqkf"eqpvcev"ykvj"umkp"cpf"g{gu0

QuickSeam 3" (76 mm) Splice Tape

1. Description

Hktguvqpg"SwkemUgco"Urnkeg"Vcrg"ku"fgukipgf"hqt"Łgnf"urnkekpi"qh"Hktguvqpg"Igqogodtcpg"rcpgnu0

2. Preparation

DfcXiWh˴. "Tguvqtg"vjg"vcrg"vq"tqqo"vgorgtcvwtg"rtkqt"vq"wug"kh"gzrqugf"vq"vgorgtcvwtgu""dgnqy"37ÅE"hqt"rtqnqpigf"rgtkqfu0

GiVghfUhYg˴. "Vjg"Igqogodtcpg"uwthcegu"owuv"dg"rtgrctgf"ykvj"SwkemRtkog"wukpi"vjg"SwkemUetwddgt"vqqn0

3. Application

Tghgt"vq"urnkekpi"ugevkqp"hqt"urgekŁe"kpuvcnncvkqp"kpuvtwevkqpu0"Wug"qh"Hktguvqpg"SwkemRtkog"cpf"SwkemUetwd/dgt"ku"tgswktgf0

4. Characteristics

D\mgJWU˴	É"	gzegnngpv"oqkuvwtg"tgukuvcpeg	
" "	É"	gzegnngpv"tgukuvcpeg"vq"jgcv"cpf"eqnf	
" "	É"	gzegnngpv"itggp"vcem	
HYW\bJWU˴	É""	Dcug"	twddgt"rqn{ogtu
" "	É""	Eqnqwt"	dncem
" "	É""	Uqnxgpvu"	pqpg
" "	É""	Uqnkf"*'+"	322
" "	É""	UrgekŁe"itcxkv{"	2.;:"Õ"2.24
" "	É""	Ewtg"uvcvg"	ewtgf
" "	É""	Vjkempguu"	2.98"oo"-1/"2.349"oo
" "	É""	Rcemcikpi"	Ngpivj"<"52.6:"o"rgt"tqnn"/"8"tqnnulrgt"dqz
" "	" "		Ykfvj"<"98"oo
" "	É""	UvqtciglUjgnh"nkhg"34"oqpvju"yjgp"uvqtgf"cv"vgorgtcvwtgu"dgvyggp"37"ÅE"cpf"47"ÅE""	" kp"qtkikpcn"wpqrgpgf"ectvqp
" "	" "		Uvqtcig"rgtkqf"ku"ujqtvgpgf"cv""jkij"vgorgtcvwtgu
" "	" "		Mggr"kp"dqz"qp"ukvg"cpf"qwv"qh"vjg"uwp

Splice Wash (SW-100)

1. Description

Hktguvqpg" Urnkeg" Ycuj"ku" fgukipgf"vq"engcp"cpf"rtgrctg"vjg"Hktguvqpg" Igqogodtcpg"kp"ctgcu"vq"tgegkxg" Urnkeg"Cfjgukxg0""Kv"ku"pqv"fgukipgf"vq"rtgrctg"vjg" Igqogodtcpg"rtkqt"vq"vjg"kpuvcnncvkqp"qh"SwkemUgco" Urnkeg"Vcrg0

2. Preparation

GiVghfUhY˙."Tgoqxg"gzeguu"ceewowncvkqpu"qh"fktv"ykvj"c"dtwuj"*cpf"ycvgt+"rtkqt"vq"crrnkecvkqp0

3. Application

Crrn{"Urnkeg"Ycuj"vq"vjg"urnkekpi"ctgc"wukpi"engcp"eqvvqp"tciu"kp"c"uetwddkpi"oqvkqp"wpvkn"vjg"urnkekpi"uwthceg" ku"fwnn"dncem"kp"eqnqwt0"Vcmg"gzvtc"ectg"cv"hcevqt{"ugcou"cpf"cnnqy"vjg"engcpgf"uwthcegu"vq"ft{0

4. Coverage

Eqxgtcig"tcvg"hqt"522"oo"qpg"ukfg."ku"82"nkp0oo"rgt"icnnqp0

5. Characteristics

D\mgJWU`	É" Hncoocdng"nkswkf	
HYW\bJWU`	É"" Eqnqwt"	Engct
" "	É"" Uqnxgpvu"	Cnkrjcvke"J{ftqectdqp
" "	É"" Xkuequkv{"	Xgt{"vjkp."htgg"łqykpi
" "	É"" Ygkijvlicnnqp"*mi+	4.898
" "	É"" UrgekŁe"itcxkv{"	2.97
" "	É"" Hncuj"Rqkpv"*ÅE+"	34.:
" "	É"" Dqknkpi"Rqkpv"*àE+	33;
" "	É"" Rcemcikpi"	7"icnnqp"*35.6"mi+
" "	É"" UvqtciglUjgnh"nkhg	34" oqpvju"kh"uvqtgf"kp"qtkikpcn"wpqrgpgf"eqpvckpgt"cv"vgorgtc/ vwtgu""" " dgvyggp"37à"cpf"47àE
" "	" "	Mggr"vjg"ocvgtkcn"qwv"qh"fktgev"uwpnkijv"wpvkn"tgcf{ hqt"koogfkcvg"wug

6. Precautions

Hncoocdng0""Mggr"cyc{"htqo"uqwtegu"qh"kipkvkqp0"Fq"pqv"uoqmg"yjgp"wukpi0"Uvqtg"cpf"wug"vjg"ocvgtkcl"kp" c"ygnn"xgpvkncvgf"rnceg0"Fq"pqv"gorv{"kpvq"ftckpu0

QuickPrime Plus

1. Description

Hktguvqpg" SwkemRtk o g" Rnwu" ku" fgukipgf" vq" engcp" cpf" rtk o g" vjg" I gq o g o dtcpg" kp" ugc o kpi" ctgcu." dghqtg" crrnkecvkqp" qh" vjg" SwkemUgc o "Urnkeg" Vcr g0" Vjg" Rtk o gt" cevkxcvgu" vjg" I gq o g o dtcpg" uwthceg" cpf" c o gnkqtcvgu" vjg" ugc o " swcnkv{0

Hktguvqpg" SwkemRtk o g" Rnwu" o wuv" dg" crrnkgf" ykvj" c" SwkemUetwddgt0" Kv" o c{" cnuq" dg" wugf" vq" engcp" vjg" Hktguvqpg" I gq o g o dtcpg" rtkqt" vq" vjg" crrnkecvkqp" qh" vjg" Hktguvqpg" Urnkeg" Cfjgukxg0

2. Preparation

DfcX i Wh˙. "Uvkt" vjtqtqwi jn{" dghqtg" cpf" fwtkpi" wug0

G i VghfUhY˙. "Uwthcegu" vq" dg" rtk o gf" o wuv" dg" engcp." ft{." htgg" qh" hqtgki p" o cvgtkcnu." cnc" cpf" fktv0" Engcp" ykvj" dtqq o "kh" tgswktgf0

3. Application

Crrn{" SwkemRtk o g" Rnwu" vq" vjg" Hktguvqpg" I gq o g o dtcpg" uwthcegu" ykvj" vjg" SwkemUetwddgt" vqqn" wukpi" nqpi" dcem" cpf" hqtvj" uvtqmgu" ykvj" o qfgtcvg" vq" jgcx{" rtguuwtg" cnqpi" vjg" ngpivj" qh" vjg" ctgc" wpvkn" uwthcegu" dgeq o g" fctm" itg{" kp" eqnqwt" ykvj" pq" uvtgcmkpi" qt" rwffnkpi0" Cnnqy" vjg" rtk o gf" uwthcegu" vq" ft{" eq o rngvgn{" *wuwcnn{" nguu" vjcp" 32" o kpwvgu+" dghqtg" crrn{kpi" SwkemUgc o "Urnkeg" Vcr g" qt" Urnkeg" Cfjgukxg0

4. Coverage

Eqxgtcig" tcvg" qh" Õ" 32" o ⁴." dqvj" ukfgu." qt" Õ" 82" nkp0" o o " qh" uvcpfctf" 5$" ugc o " rgt" icnnqp0" Vjkppkpi" ku" pqv" cnnqygf0

5. Characteristics

D \mgJWU˙		
	É'	gzegnngpv" tgukuvcpeg" vq" c igkpi
" "	É'	gzegnngpv" tgukuvcpeg" vq" jgcv" cpf" eqnf
" "	É'	vtcpunwegpv" y jgp" ft{" yjkej" cnnqyu" iwkfg" o ctmu" vq" ujqy" vjtqwij" chvgt" crrnkec/ vkqp0

HYW \bJWU˙		
	É''	Dcug""	u{pvjgvke" twddgt" rqn{ o gtu
" "	É''	Eqnqwt"	Vtcpunwegpv" itg{
" "	É''	Uqnxgpvu"	J grvcpg." vqnwgpg." o gvj{n" cneqjqn
" "	É''	Uqnkfu" * ' +"	38/3:
" "	É''	Xkuequkv{"	Xgt{" vjkp." htgg" łq ykpi
" "	É''	Y gki jvli cnnqp" *mi+"	5
" "	É''	UrgekŁe" i tcxkv{"	2.9;5
" "	É''	Hncuj" Rqkpv" *ÅE+"	/39.99
" "	É''	Rcemci kpi"	3" icnnqp" *5.:" n+" cpf" 5" icnnqp" *33.6" n+" rcknu
" "	É'	UvqtciglUjgnf" nkhg" 34" o qpvju" kh" uvqtgf" kp" qtki kpcn" wpqrgpgf" eqpvckpgt" cv" vg o rgtc/ vwtgu	
	"	dgvy ggp" 37" àE" cpf" 47" àE	

6. Precautions

Hnc o o cdng0" Mggr" c yc{" htq o "uqwtegu" qh" ki pkvkqp0" Fq" pqv" u o qmg" y jgp" wukpi0" Uvqtg" cpf" wug" vjg" rtqfwev" kp" y gnn" xgpvkncvgf" ctgcu0" Cxqkf" eqpvcev" ykvj" umkp" cpf" g{gu0" Fq" pqv" g o rv{" kpvq" ftckpu0

Lap Sealant HS

1. Description

Hktguvqpg"Ncr"Ugcncpv"ku"fgukipgf"vq"ugcn"cpf"ogejcpkecnn{"rtqvgev"vjg"gzrqugf"gfig"qh"cnn"Łgnf"hcdtkecvgf"ugcou"ocfg"ykvj"Urnkeg"Cfjgukxg0

2. Preparation

DfcX i Wh´. "Tguvqtg"vq"tqqo"vgorgtcvwtg"rtkqt"vq"wug"kh"gzrqugf"vq"vgorgtcvwtgu">"37"àE"hqt"c"rtqnqpigf"rgtkqf0

G i VghfUhY´. Uwthcegu"qp"yjkej"Ncr"Ugcncpv"ku"vq"dg"crrnkgf"owuv"dg"engcp."ft{."htgg"htqo"nqqug"cpf"hqtgkip"ocvgtkcnu."qkn"cpf"itgcug"cpf"rtkogf"ykvj"Urnkeg"Cfjgukxg0"Yckv"okpkowo"6"jqwtu"dgvyggp"urnkekpi"cpf"crrnkecvkqp"qh"Ncr"Ugcncpv0"Wpfgt"dcf"ygcvjgt"eqpfkvkqpu"Ncr"Ugcncpv"owuv"dg"crrnkgf"dghqtg"gpf"qh"vjg"yqtmkpi"fc{0

3. Application

Crrn{"ykvj"c"ocuvke"iwp"c""dgcf"qh"Ncr"Ugcncpv"cnqpi"vjg"rtqrgtn{"engcpgf."gzrqugf" Igqogodtcpg"ncr" gfig0"C"rtghqtogf"vqqn"ujcn"dg"wugf"vq"hgcvjgt"vjg"dgcf"qh"ugcncpv0"Hgcvjgtkpi" owuv"vcmg"rnceg"ko ogfkcvgn{" chvgt"vjg"Ncr"Ugcncpv"ku"crrnkgf0

4. Coverage

9"nkp0o o"rgt"ectvtkfig0"Vjkppkpi"ku"pqv"cnnqygf0

5. Characteristics

D \mg]WU`	É" gzegnngpv"tgukuvcpeg"vq"q|qpg."wnvtc"xkqngv"cpf"igpgtcn"ygcvjgtkpi
" "	É" gzegnngpv"tgukuvcpeg"vq"jgcv."eqnf"cpf"ycvgt
" "	É" iqqf"cfjgukqp"vq"Hktguvqpg" Igqogodtcpg"ujggv."ogvcnu."yqqf"cpf"eqpetgvg
" "	É" iqqf"unwo r"tgukuvcpeg
HYW \b]WU`	É"" Dcug" twddgt"rqn{ogtu
" "	É"" Eqnqwt" dncem
" "	É"" Uqnxgpvu" nki jv"cnkrjcvke"uqnxgpv
" "	É"" Uqnkfu"* ' +" okp0":2
" "	É" Ygki jvli cnqp"*mi+" 6.46
" "	É" UrgekŁe"itcxkv{" 3.56/3.68
" "	É" Hncuj"Rqkpv"*àE+" 33
" "	É"" Rcemcikpi" 47"vwdgulectvqp
" "	É"" UvqtciglUjgnh"nkfg"34" oqpvju"yjgp"uvqtgf"kp"qtkikpcn"ugcngf"eqpvckpgtu"cv"vgo/ rgtcvwtgu
"	dgvyggp"37à"cpf"47àE0

6. Precautions

Hnc o ocdng0"Mggr" cyc{"htq o "uqwtegu"qh"kipkvkqp0" Fq"pqv"u o qmg" yjgp"wukpi0"Wug"kp"c" ygnn"xgpvkncvgf" rnceg0

1. Description

Hktguvqpg"Ycvgt"Dnqem"Ugcn"ku"fguigpgf"vq"rtqxkfg"c"ycvgtvkijv"ugcn"cu"kpfkecvgf"kp"vjg"fgvcknu0

2. Preparation

DfcXiWf˴. Tguvqtg"vq"tqqm"vgmrgtcvwtg"rtkqt"vq"wug"kh"gzrqugf"vq"vgmrgtcvwtgu">"37"àE"hqt"c"rtqnqpigf"rgtkqf0

GiVghfUhY˴. Uwthcegu"qpvq"yjkej"Ycvgt"Dnqem"Ugcn"ku"vq"dg"crrnkgf"ujcnn"dg"htgg"htqm"nqqug"rctvu"qh"eqpetgvg." uvqpg." mqtvct." hqtgkip" mcvgtkcnu." cpf"qvjgt"eqpvcmkpcpvu0

3. Application

Crrn{"c"dgcf"qpvq"vjg"uwduvtcvg"uwthceg0"Tqnn"qt"rtguu"vjg"łcujkpi"mgodtcpg"Łtom{"cickpuv"vjg"ugcn"cpf" uwduvtcvg"cxqkfkpi"ytkpmngu"vq"cuuwtg"c"eqmrngvg"ugcn0"Kpuvcnn"vjg"crrtqrtkcvg"Hktguvqpg"fgvckn"cu"rgt"Hktg/ uvqpgøu"ewttgpv"urgekŁecvkqp0

4. Coverage

5"nkp0"m0"rgt"vwdg"qt"6"ftckpu"rgt"vwdg

5. Characteristics

D\mg]WU˵	É

Termination Bar

1.   Description

Hktguvqpg"Vgtokpcvkqp"Dct"ku"fgukipgf"hqt"cvvcejkpi"cpf"ugcnkpi"łcujkpi"vgtokpcvkqpu"cu"rgt"Hktguvqpgøu" ewttgpv"urgekŁecvkqpu0

2.   Preparation

DfcXi Wh˙. "Yjgp"Łgnf"ewvvkpi"ku"pgeguuct{."tgoqxg"cp{"dwttu"htqo"vjg"dct"cpf"engcp"wr"ujcxkpiu"vjcv"oc{" tguwnv"htqo"ewvvkpi0

G i VghfUhY˙. "Owuv"dg"htgg"htqo"fwuv."fktv."qkn."ycvgt"cpf"qvjgt"eqpvcokpcpvu"rtkqt"vq"kpuvcnncvkqp"cpf"ppgfu" vq"rtqxkfg"vjg"tgswktgf"rwnn/qwv"tgukuvcpeg0

3.   Application

Kpuvcnn"Ycvgt"Dnqem"Ugcn"dgjkpf"łcujkpi0"Cpejqt"vjg"dct"vjtqwij"rtg/rwpejgf"jqngu"cv"c"tcvg"vq"ockpvckp"c" vkijv"eqortguukqp"vq"vjg"ycnn"cickpuv"Ycvgt"Dnqem"Ugcn0"Tgoqxg"gzeguu"łcujkpi"ocvgtkcn"cdqxg"cpf"kpuvcnn" Ncr"Ugcncpv"kpvq"vjg"wrrgt"ejcppgn0"Mggp"gcej"rkgeg"*5027"oo"htqo"Vgtokpcvkqp"Dct"ugrctcvgf"htqo"cflqkpkpi" dct"d{"8"oo"cpf"ewv"vjg"dct"cv"kpukfg"cpf"qwvukfg"eqtpgtu0

4.   Characteristics

"	É"	Ocvgtkcn	"	"	Eqttqukqp/tgukuvcpv"cnwokpkwo
"	É"	Ngpivj"*o+	"	"	5.27
"	É"	Ykfvj"*oo+	"	"	49.6
"	É"	Vjkempguu"*oo+	"	4.4
"	É"	Jqngu"*oo+	"	"	9.3"z";.;"unqvvgf"jqngu"/"322"oo"qp"egpvtg
"	É"	Rcemcikpi	"	"	72"rkgegu"qh"5.27"nkp0o0"rgt"ectvqp"*374.6"o+
"	É"	Uvqtcig	"	"	kp"c"ft{"rnceg

Attachment 2

Installation Tools

1. Job preparation

""""""""""""""""""""""""" É """vcrg"ogcuwtgu"*72"o"cpf"7"o+

""""""""""""""""""""""""" É """ejcnm"nkpg

""""""""""""""""""""""""" É """uekuuqtu

""""""""""""""""""""""""" É """ency"jcoogt

""""""""""""""""""""""""" É """uvkhh"dtkuvng"dtqqou

""""""""""""""""""""""""" É """uswggigg

2. Cleaning the Firestone Geomembrane

""""""""""""""""""""""""" É """engcp"eqvvqp"tciu

""""""""""""""""""""""""" É """engcpkpi"cigpv"/"Urnkeg"Ycuj"*kp"rgvtqn"ecp+

3. Mechanical fixation

""""""""""""""""""""""""" É """ftknnkpi"ocejkpg"ykvj"mg{

""""""""""""""""""""""""" É """ftknn"dkvu"*ocuqpt{"cpf"uvggn+

""""""""""""""""""""""""" É """jcem/ucy"ykvj"dncfgu

""""""""""""""""""""""""" É """uetgy/ftkxgt

""""""""""""""""""""""""" É """ecwnmkpi"iwp

""""""""""""""""""""""""" É """vkp"upkr

4. Field seams

""""""""""""""""""""""""" É """SwkemUetwddgt"vqqn"*rcf"-"jcpfng+

""""""""""""""""""""""""" É """uocnn"rncuvke"dwemgv

""""""""""""""""""""""""" É """octmgt"*yjkvg+

""""""""""""""""""""""""" É """tqnngt"/"72"oo"ykfvj"*uknkeqp"twddgt+

5. Adhesion of the Firestone Geomembrane

""""""""""""""""""""""""" É """dtwujgu"*uqnxgpv"tgukuvcpv."ujqtv"jckt."322"oo"ykfvj+

""""""""""""""""""""""""" É """rckpt"tqnngtu"*uqnxgpv"tgukuvcpv."ujqtv"jckt."447"oo"ykfvj+

""""""""""""""""""""""""" É """jqv"ckt"iwp

""""""""""""""""""""""""" É """tqnngt"/"72"oo"ykfvj"*uknkeqp"twddgt+

6. Additional

""""""""""""""""""""""""" É """gngevtkecn"ngcfu

""""""""""""""""""""""""" É """twddgt"inqxgu

Attachment 3

Firestone Geomembrane Chemical Resistance Chart

Hktguvqpg" Igqogodtcpg"gzrquwtg"vq"vjgug"ejgokecnu"ecwugu"pq"uygnnkpi."uqhvgpkpi"qt"uwthceg"fgvgtkqtcvkqp"qh"vjg" ogodtcpg0

Cegvcokfg	Ecnekwo"uknkecvg"*vq"43ÅE+"
Cet{okfg"*vq"82ÅE+"	Ecnekwo"uwnÅfg"*vq":2ÅE+
Cegvcnfgj{fg"*vq"5:ÅE+"	Ecwuvke"uqfc"*72'."vq":2ÅE+
Cegvqrjgpqpg"*vq"82ÅE+"	Ejnqtcegvqpg"*vq"43ÅE+
Cegv{ngpg"icu"*vq";5ÅE+"	Ekvtke"cekf"*vq";5ÅE+
Cnwo"*vq"82ÅE+"	Eqrrgt"KK"ejnqtkfg"*vq":2ÅE+
Cnwokpwo"cegvcvg	Eqrrgt"e{cpkfg"*vq"82ÅE+
Cnwokpwo"ejnqtkfg	Eqrrgt"pkvtcvg"*vq":2ÅE+
Cnwokpwo"pkvtcvg	Eqrrgt"uwnhcvg"*vq"43ÅE+
Cnwokpwo"uwnhcvg"*vq"82ÅE+"	Eqrrgt"uwnÅfg"*vq"43ÅE+"
Cooqpkc"	
Cooqpkc"icu"*eqnf+	Fkktqp"uwnÅfg
Cooqpkc"icu"*jqv+"*vq"82ÅE+"	Fkkuqrtqr{n"mgvqpg"*vq"43ÅE+
Cooqpkc"j{ftqzkfg"*vq"32'+	Fkogvj{n"jqnokcokfg
Cooqpkc"j{ftqzkfg"*eqpegpvtcvgf+	Fkdwv{n"egnnquqnxg"cfkrqvg"*vq";5ÅE+"
Cooqpkwo"ectdqpcvg	Fgzvtqug"*vq":2ÅE+" "
Cooqpkwo"ejnqtkfg	Fkuqfkwo"rjqurjcvg"*vq"43ÅE+
Cooqpkwo"pkvtcvg	Fkqev{n"cokpg"*vq"6;ÅE+
Cooqpkwo"rjqurjcvg	" " " " " "
Cooqpkwo"uwnhcvg	Gvj{n"ejnqtkfg"*vq"82ÅE+" " "
Co{"cneqjqn	Gvj{n"uknkecvg""*vq"43ÅE+" "
Ctugpke"cekf"*vq"82ÅE+"	Gvj{ngpg"in{eqn"*vq"322ÅE+
Cfkrke"cekf"*vq"82ÅE+"	Gvjngpfkcokpg"*vq"6;ÅE+" " "
" "	Gvj{n"cneqjqn"*vq";5ÅE+" " "
Dctkwo"ejnqtkfg"*vq":2ÅE+"	Gvj{n"uwnhcvg"*vq"5ÅE+" "
Dctkwo"j{ftqzkfg	
Dctkwo"uwnÅfg	Hnwqtqdqtke"cekf"*vq"82ÅE+"
Dgp|cnfgj{fg"*vq";5ÅE+"	Hqtocnfgj{fg"*vq"62'."vq"43ÅE+
Dgp|{n"cneqjqn	Htgqp"364D"*vq"43ÅE+
Dqtke"cekf"*vq"82ÅE+"	Hnqtqogvjcpg"*vq"43ÅE+
Dqtkwo"uwnhcvg"*vq"43ÅE+"	" " " " " "
" "	Igncvkp
Ecnekwo"cegvcvg	Inwequg
Ecnekwo"ejnqtkfg"*vq"43ÅE+"	Inwg"*vq"43ÅE+" " "
Ecnekwo"j{ftqejnqfvg"*vq"42'."vq"43ÅE+"	" "
Ecnekwo"j{ftqzkfg"*vq"43ÅE+	
Ecnekwo"pkvtcvg"*vq"43ÅE+	

" Cegvke"cekf"*vq"32 ' ."vq"43ÅE+"
" Cegvke"cpj{ftkfg"
" Cegvqpg"
" Cpj{ftqłwqtke"cekf"
" Cpknkpg"*vq";5ÅE+"
" Cpknkpg"f{g"
" Cpkocn"hcvu"*32 ' "vq"82ÅE+"
" "
" Dwv{n"cegvcvg"*vq"82ÅE+"
" Dwv{n"cneqjqn"*vq"343ÅE+"
" "
" Ectdkpqn"*vq"43ÅE+"
" Ectdqpke"cekf"*vq":7ÅE+"
" Ectdqpke"cekf"icu"*vq":7ÅE+"
" Ecuvgt"qkn"*vq"82ÅE+"
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" Fkqev{nrjvjcncvg"*cv"82ÅE+"
" Fkqzcpg"*vq"93ÅE+"
" "
" Grkejnqtqj{ftkp"*vq"43ÅE+"
" Gvjcpqncokpg"*vq"43ÅE+"
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" Hwthwtcn"*vq"93ÅE+"

" In{egtkp"*vq";5ÅE+"

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" J{ftqigp"rgtqzkfg"*vq"322 ' ."vq"43ÅE+"
" J{rqejnqtqwu"cekf""cv"72 ' "vq"82ÅE+"
"
" Nkpuggf"qkn"*cv"43ÅE+"

Ogvj{n"cegvcvg"*vq"93ÅE+
Ogvj{n"gvj{n"mgvqpg"*vq";5ÅE+
Oqpq"gvjcpqn"cokpg"*vq"82ÅE+
Ogvj{n"egnnquqnxg"*vq";5ÅE+
" " " "
Pkvtke"cekf"*vq"57 ' ."vq"43ÅE+
Pkvtqdgp|gpg"*vq"82ÅE+" " " "
Pkvtq"gvjcpg"*vq"43ÅE+
Pkvtqogvjcpg"*vq"6;ÅE+
" " " "
Qnkxg"qkn"*vq"43ÅE+
" " " "
Rcnokvke"cekf"fknwvg"*vq"72 ' ."vq"43ÅE+
Rketke"cekf"*vq"43ÅE+
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R{tkfkpg"*vq"93ÅE+
" " " "
Uvgctke"cekf"eqpegpvtcvgf"*vq"82ÅE+" " "
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Uwnhwtke"cekf"*vq"47 ' ."vq"82ÅE+
Uwnhwtke"cekf"icu"*vq"72 ' ."vq"322ÅE+
Uwnhwtqwu"cekf"*vq"42 ' ."vq"322ÅE+
Uwnhwtqwu"cekf"icu"*vq"43ÅE+
" " " "
Vtkgvjcpqn"cokpg""*vq"93ÅE+
" " "
Wtgc"*vq";5ÅE+
" " " " "
Xgigvcdng"qkn"*vq";5ÅE+"
" " " "

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"   CUVO"hwgn"qkn"C"
"   CUVO"hwgn"qkn"D"
"   CUVO"hwgn"qkn"E"
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"   "
"   Dgp|gpg"
"   Dgp|{n"ejnqtkfg"
"   Dgp|kpg"
"   Dwvcpg"
"   Dwv{n"cet{ncvg"
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Htgqp"43
Htgqp"335
Hwgn"qkn
Hwtcp
Hwthwtcn"*cv"322ÅE+

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Incekcn"cegvke"cekf

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qt"jkijgt+
η/Jgrvcpg
J{ftqigp"rgtqzkfg"*vq"322 ' ."cdqxg"43ÅE+
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Kuqrtqr{ngvjgt
Kuqco{n"ejnqtkfg
Kuqco{ngvjgt
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Kuqdwv{npcokfg
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Lgv"Hwgn
L0R0"hwgn"qkn
" " " " " " "
Nceswgt
Nctf"qkn
Nkpqngpke"cekf
Nkswkf"rgvtqpkwo"icu
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" "	Vgvtcj{ftqhwtqp"]VJH_"*cv"43ÅE+
" "	Vtkejnqtoogvjcpg
" Qz{igp"*cdqxg"43ÅE+"	Vwpi"qkn"*cv"99ÅE+
" Qngke"cekf"	
" Qevcpg"	Z{ngpg
" "	
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" Rkpg"qkn"	"
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" Rtqrcpg"	" " " "
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" Rjgpqn"*cv"43ÅE+"	
" R{tqng"	
" "	" " "
" Uqngpg"	
" Uv{tgpg"	" " " " " " "
" Uwnhwtke"cekf"*eqpegpvtcvgf+	
" Uwnhwt"oqpqejnqtkfg"	
" Uwnhwt"fkejnqtkfg"	
" Uwnhwt"vtkqzkfg"	

Vjg"fcvc"kp"vjku"fqewogpv"ku"kphqtocvkqpcn"kp"pcvwtg."kpvgpfgf"hqt"wug"cu"c"iwkfg."kv"ku"dgnkgxgf"vq"dg"ceewtcvg"cpf"tgnkcdng"cpf"fqgu"pqv"eqpuvkvwvg"c"ycttcpv{"qt"iwctcpvgg0"Hktguvqpg"Dwknfkpi"Rtqfwevu"cuuwogu"pq"tgurqpukdknkv{"hqt"vjg"wug"qh"vjku"kphqtocvkqp0"Crrnkecvkqp"qh"vjku"kphqtocvkqp"hqt"cp{"rtqlgev"ku"vq"dg"cv"vjg"tgeqoogpfcvkqp"qh"vjg"rtqlgev"gpikpggt0"Eqpvcev"Hktguvqpg"Dwknfkpi"Rtqfwevu"hqt"hwtvjgt"kphqtocvkqp"qt"ogodctpg"ugngevkqp"etkvgtkc0