THE DIFFERENCE BETWEEN FR AND AR

FLAME RESISTANT (FR)

Flame Resistant garments earn their designation because they are made of fabrics that are inherently resistant to or are treated to be resistant to catching fire when exposed directly to flame. The material will resist ignition and/or self-extinguish when ignited, and they will not melt. FR garments also create a thermal barrier to help protect the wearer's skin when exposed to direct heat energy and may minimize the amount of 2nd and 3rd degree burns incurred. FR fabrics include:

- Modacrylics, Aramids and Para-aramids are among the inherently flame resistant fabrics. They will not lose those characteristics through wear or laundering.
- Treated Fabrics, such as cotton and cotton blends, require FR treatment to achieve self-extinguishing properties. This treatment will eventually fade with washing but, if the garment is properly cared for, the treatment can last the life of the garment. FR treated cotton and cotton blends provide a more comfortable and affordable solution.

ARC RATED (AR)

Arc Rated (AR) garments help to provide flame and thermal protection from exposure to an electrical arc flash. AR fabrics and garments are designed and treated to help limit the exposure and burn percentage as a result of an electrical arc flash incident.

In 2015, the NFPA introduced the new term "AR (Arc Rated)" to help identify the critical difference between AR and FR (Flame Resistant) clothing as it applies to Arc Flash Protection. Remember: All AR garments are flame resistant, however not all FR garments are rated for arc flash protection.

There are many variables to consider when selecting **AR** protective clothing. Most importantly the employer must perform a **Hazard Risk Analysis** for the workplace to identify risks and set the appropriate boundaries. The results of this analysis will then direct the employer into the level of protection needed.

Each AR garment is given an Arc Thermal Performance Value (ATPV) or Energy Break-open Threshold (EBT). This value represents the level of protection the garment is tested to provide when exposed to variable levels of heat in an electric arc flash. Higher levels of protection typically require thicker and/or additional layers. The ATPV or EBT of the garment should be equal to or greater than the energy level of the work area as determined by the Hazard Risk Analysis.

The NFPA 70E should be reviewed thoroughly and regularly to ensure compliance and to be aware of any revisions or updates as they occur.

DUAL CERTIFIED PROTECTION

Dual Certified means that the materials have been tested and certified to meet both the NFPA 70E (Arc Flash Protection) and the NFPA 2112 (Flash Fire Protection) standards. The NFPA 2112-2012 requires third party certification of the garment, and all PIP NFPA 2112-2012 certified garments are UL certified. All PIP Dual-Certified apparel are identified as such.



244 AR/FR SWEATSHIRTS

245 AR/FR SHIRTS

AR/FR HI-VIS VESTS

247 AR/FR ADDITIONAL CLOTHING

248 DUAL CERTIFIED CLOTHING

ARC FLASH PROTECTION KITS

254 ARC FLASH HEAD GEAR

256 ARC FLASH ACCESSORIES

FLAME RESISTANT &

AR/FR CLOTHING

SWEATSHIRT

PPE Category	PROTECTIVE EQUIPMENT	PROTECTIVE CLOTHING	MIN ARC Rating
1 PPE	Hard hat Safety glasses or safety goggles (SR) Hearing protection (ear canal inserts) Heavy duty leather gloves* Leather work shoes	Arc rated long sleeve shirt and pants or arc rated coverall Arc rated face shield or arc flash suit hood Arc rated jacket, parka, rainwear or hard hat liner	4 cal/cm²
PPE PPE	Hard hat Safety glasses or safety goggles (SR) Hearing protection (ear canal inserts) Heavy duty leather gloves* Leather work shoes	Arc rated long sleeve shirt and pants or arc rated coverall Arc rated face shield and arc rated balaclava or arc flash suit hood Arc rated jacket, parka, rainwear or hard hat liner	8 cal/cm²
PPE PPE	Hard hat Safety glasses or safety goggles (SR) Hearing protection (ear canal inserts) Heavy duty leather gloves* Leather work shoes	Arc rated long sleeve shirt Arc rated pants Arc rated coverall Arc rated arc flash suit jacket Arc rated arc flash suit pants Arc rated arc flash suit hood Arc rated gloves Arc rated jacket, parka, rainwear or hard hat liner	25 cal/cm²
PPE	Hard hat Safety glasses or safety goggles (SR) Hearing protection (ear canal inserts) Heavy duty leather gloves* Leather work shoes	Arc rated long sleeve shirt Arc rated pants Arc rated coverall Arc rated arc flash suit jacket Arc rated arc flash suit pants Arc rated arc flash suit hood Arc rated gloves Arc rated jacket, parka, rainwear or hard hat liner	40 cal/cm²

When determining which arc rating of PPE is required, the term HRC (Hazard/Risk Category) is now referred to as "PPE Category."

The former HRC Level 0 no longer exists. The NFPA now requires arc rated clothing for tasks that were previously identified as Category 0.

Arc rated balaclava hoods are required when an individual's head is inside the arc boundary. Arc rated full hoods are required when clothing rated higher than 12 cal/cm² is worn.

ANSI 107 TYPE R CLASS 3 19 CAL PROTECTION



FLAME RESISTANT SEGMENTED TAPE



ARC RATED FLAME RESISTANT

lied
ck



COMFORT & BREATHABILITY



ARC RATED EL	E RESISTANT SHIRTS (SHORT SIFFVF T-SHIRTS SHOULD BF WORN AS AN UND	ERGARMENT ONLY)

STYLE NUMBER	COLOR	GARMENT	PPE CATEGORY	ARC RATING	MATERIAL	WEIGHT	POCKETS	STANDARD	CLOSURE	REFLECTIVE	SIZE
385-FRLS-LG 385-FRLS-NV 385-FRLS-OR	□ Light Gray □ Navy □ Orange	Long Sleeve T-Shirt	2	11 cal/cm²	100% Cotton	6.5 oz. Knit	1	NFPA 70E, ASTM F1506	Pullover	None	M - 3X
385-FRHN-LG 385-FRHN-NV 385-FRHN-OR	□ Light Gray □ Navy □ Orange	Long Sleeve Henley	2	11 cal/cm²	100% Cotton	6.5 oz. Knit		NFPA 70E, ASTM F1506	Pullover	None	M - 3X
385-FRSS-LG 385-FRSS-NV	□ Light Gray □ Navy	Short Sleeve T-Shirt	2	11 cal/cm²	100% Cotton	6.5 oz. Knit		NFPA 70E, ASTM F1506	Pullover	None	M - 3X
315-1350FR	☐ Hi-Vis Lime Yellow	Long Sleeve T-Shirt	2	8.6 cal/cm²	100% Cotton	8 oz. Knit	1	ANSI 107 Type R Class 3, NFPA 70E, ASTM F1506	Pullover	2" Silver Sewn-On	S - 3X
ARC RATED FLAM	E RESISTANT SW	EATSHIRTS									
385-FRPH-NV 385-FRPH-OR	□ Navy □ Orange	Hoodie	2	20 cal/cm²	100% Cotton	12 oz. Fleece Knit	1	NFPA 70E, ASTM F1506	Pullover	None	M - 3X
385-FRZH-NV 385-FRZH-OR	■ Navy ■ Orange	Hoodie	2	20 cal/cm²	100% Cotton	12 oz. Fleece Knit	2	NFPA 70E, ASTM F1506	Zipper	None	M - 3X

AR/FR CLOTHING

RESISTS IGNITION & SELF EXTINGUISHES



FR HOOK AND LOOP CLOSURE & FR REFLECTIVE TAPE AND BINDING

COVERALLS / OVERALLS / JACKETS / OVERPANTS

ARC RATED CLOTHING

- ARAMID HIGH TENACITY THREAD
- BAR TACKED AT ALL STRESS POINTS
- ULTRALIGHT STYLES AVAILABLE (*)

ARC RATED FLAME RESISTANT COVERALLS (NFPA 70E, ASTM F1506)

STYLE NUMBER	COLOR	MATERIAL	PPE CAT.	ARC RATING	POCKETS	CLOSURE	SIZE
9100-2160D	■ Navy	Cotton / Nylon	2	8 cal/cm²	2	Hook & Loop	S - 5X
9100-2170D	■ Navy	Cotton / Nylon	2	12 cal/cm²	2	Hook & Loop	S - 5X
9100-52772	■ Navy	Cotton / Nylon	3	25 cal/cm²	3	Hook & Loop	S - 5X
9100-52758	■ Navy	Cotton / Nylon	3	33 cal/cm²	3	Hook & Loop	S - 5X
9100-240ULT	☐ Navy	Protera® / Ultrasoft®	4	40 cal/cm²	2	Hook & Loop	S - 5X
ARC RATED FL	AME RES	ISTANT OVERA	LLS (NFP	A 70E, ASTM F1506)		
9100-52564	■ Navy	Cotton / Nylon	2	12 cal/cm²	2	Buckle	S - 5X
9100-21731	■ Navy	Cotton / Nylon	3	25 cal/cm²	2	Buckle	S - 5X
9100-53680	■ Navy	Cotton / Nylon	3	33 cal/cm²	2	Buckle	S - 5X
9100-52422	☐ Navy	Cotton / Nylon	4	40 cal/cm²	2	Buckle	S - 5X
9100-75001	□ Navy	Cotton / Nylon	4	75 cal/cm²	2	Buckle	S - 5X
9100-53750	☐ Gray	Aramid / Cotton	4	100 cal/cm²	2	Buckle	M - 2X
ARC RATED FL	AME RES	ISTANT JACKET	rs (NFPA 7	OE, ASTM F1506)			
9100-21782	□ Navy	Cotton / Nylon	2	12 cal/cm²	2	Hook & Loop	S - 5X
9100-21721	□ Navy	Cotton / Nylon	3	25 cal/cm²	2	Hook & Loop	S - 5X
9100-52680	□ Navy	Cotton / Nylon	3	33 cal/cm²	2	Hook & Loop	S - 5X
9100-52412	□ Navy	Cotton / Nylon	4	40 cal/cm ²	2	Hook & Loop	S - 5X
9100-524ULT	■ Navy	Protera® / Ultrasoft®	4	40 cal/cm ²	2	Hook & Loop	S - 5X
9100-75000	■ Navy	Cotton / Nylon	4	75 cal/cm²	2	Hook & Loop	S - 5X
9100-52750	☐ Gray	Aramid / Cotton	4	100 cal/cm²	2	Hook & Loop	M - 2X
ARC RATED FL	AME RES	ISTANT OVERF	PANTS (IFPA 70E, ASTM F15	i06)		
9100-22070	□ Navy	Cotton / Nylon	2	12 cal/cm²	2	Hook & Loop / Drawstring	S - 5X
9100-530ULT*	□ Navy	Protera® / Ultrasoft®	4	40 cal/cm²	4	Hook & Loop / Drawstring	S - 5X





DUAL CERTIFIED CLOTHING

SHIRTS / JEANS

DUAL CERTIFIED

DUAL CERTIFIED MEANS THE GARMENT AND MATERIAL HAVE BEEN TESTED AND CERTIFIED BY A THIRD PARTY AND INDICATES COMPLIANCE TO TWO STANDARDS.

NFPA 70E: STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE

NFPA 2112: STANDARD FOR PROTECTION AGAINST FLASH FIRE

ARC RATED FLAME RESISTANT DUAL CERTIFIED CLOTHING

STYLE NUMBER	COLOR	GARMENT	PPE CATEGORY	ARC RATING	MATERIAL	WEIGHT	POCKETS	STANDARD	CLOSURE	SIZE
385-FRWS-NV 385-FRWS-KH	□ Navy ■ Khaki	Button Down	2	8 cal/cm²	90% Cotton 10% Nylon	7 oz. Woven FR Fabric	2	NFPA 70E, ASTM F1506 & NFPA 2112-2012	Buttons	S - 4X
385-FRRJ	□ Denim	Relaxed Fit Jeans	2	16 cal/cm²	100% Cotton Denim Twill	13 oz. Woven FR Fabric	5	NFPA 70E, ASTM F1506 & NFPA 2112-2012	Zipper	Waist: 30-50" Length: 30-36"
385-FRCJ	Denim	Carpenter Jeans	2	16 cal/cm²	100% Cotton Denim Twill	13 oz. Woven FR Fabric	6	NFPA 70E, ASTM F1506 & NFPA 2112-2012	Zipper	Waist: 30-50" Length: 30-36"

385-FRWS

DUAL CERTIFIED CLOTHING

COVERALLS



10% Nylon

90% Cotton

10% Nylon

90% Cotton

10% Nylon

8 cal/cm²

12 cal/cm²

FR Fabric

FR Fabric

7 oz. Woven

9 oz. Woven

FR Fabric

& NFPA 2112-2012

& NFPA 2112-2012 NFPA 70E. ASTM F1506

& NFPA 2112-2012

NFPA 70E, ASTM F1506

Hook & Loop S - 5X

Hook & Loop S - 5X

Breathability

Action Back

For Mobility

Insect Repellant

Built-In

Tan

■ Navy

9100-2110D

9100-2170D

ARC FLASH PROTECTION KITS KIT FEATURES ARC KITS INCLUDE: CAP STYLE HARD HAT EVOLUTION: 280-EVG151-OR - NON-VENTED CLASS E STORAGE BAG







SAFETY GLASSES













8 & 12 CAL ARC KITS



8 & 12 CAL ARC KITS

PIP's 8 & 12 cal Arc Flash Kits are designed to meet your PPE 2 needs (insulating glove kits and arc rated hearing protection are not included). These kits provide you with the components needed to be in compliance with the NFPA 70E Standard.

PPE 2 ARC PROTECTION KITS

ITEM NUMBER	CLOTHING	CLOTHING STYLE NUMBER	FEATURE	BALACLAVA	ARC SHIELD	ARC RATING	STORAGE BAG
9150-5388E	Dual Certified Coverall	9100-2160D	Action Back	9100-HDFR15	9400-52505	8 cal/cm²	Carry Bag
9150-5388EB	Dual Certified Coverall	9100-2160D	Action Back	9100-HDFR15	9400-52505	8 cal/cm²	Back Pack
9150-5488E	Dual Certified Coverall	9100-2170D	Action Back	9100-HDFR15	9400-52505	12 cal/cm²	Carry Bag
9150-5488EB	Dual Certified Coverall	9100-2170D	Action Back	9100-HDFR15	9400-52505	12 cal/cm²	Back Pack
9150-52804	Jacket & Overall	9100-21780 & 9100-52564	2-Piece Set	9100-HDFR15	9400-52505	12 cal/cm²	Back Pack
9150-52810	Jacket & Pant	9100-21780 & 9100-22070	2-Piece Set	9100-HDFR15	9400-52505	12 cal/cm²	Carry Bag
9150-53871	Jacket & Overall	9100-21780 & 9100-52564	2-Piece Set	9100-HDFR15	9400-52505	12 cal/cm²	Carry Bag



12 CAL ARC HEAD GEAR KITS

PIP's 12 & 20 cal Arc Flash Head Gear Kits are designed to meet PPE 2 needs for workers (insulating glove kits, and arc rated clothing and hearing protection are not included). These kits provide you with the above-the-neck components needed to be in compliance with the new NFPA 70E 2012 standard.

PPE 2 ARC HEAD GEAR KITS

ITEM NUMBER	BALACLAVA	ARC SHIELD	HEAD GEAR BAG	ARC RATING	STORAGE BAG
9150-52508	9100-HDFR15	9400-52505	9400-52509	12 cal/cm ²	None
9150-52512	9100-HDFR15	9400-52505	9400-52509	12 cal/cm ²	Carry Bag
9150-52500	9100-HDFR15	9400-52505	9400-52509	12 cal/cm ²	Back Pack
9150-56510		9400-52505		12 cal/cm²	
9150-56511		9400-52501		12 cal/cm ²	

ARC FLASH PROTECTION KITS

25 & 33 CAL / 40-100 CAL ARC KITS



25 & 33 CAL ARC KITS

For higher voltage situations, PIP's 25 & 33 cal Arc Flash Kits are designed to meet your PPE 3 needs (insulating glove kits and arc rated hearing protection are not included). The kits come with safety helmet and arc hood in addition to the components needed to be in compliance with the NFPA 70E Standard.

PPE 3 ARC PROTECTION KITS

ITEM NUMBER	CLOTHING	CLOTHING STYLE NUMBER	FEATURE	HOOD	ARC RATING	STORAGE BAG
9150-52815	Coverall	9100-52772	Aramid Thread & Cuffs	9150-52515	25 cal/cm²	Carry Bag
9150-52821	Coverall	9100-52772	Aramid Thread & Cuffs	9150-52515	25 cal/cm²	Back Pack
9150-53003	Jacket & Overall	9100-21721 & 9100-21731	2-Piece Set	9150-52515	25 cal/cm²	Carry Bag
9150-53018	Jacket & Overall	9100-21721 & 9100-21731	2-Piece Set	9150-52515	25 cal/cm²	Back Pack
9150-52917	Coverall	9100-52758	Aramid Thread & Cuffs	9150-52685	33 cal/cm²	Carry Bag
9150-52946	Coverall	9100-52758	Aramid Thread & Cuffs	9150-52685	33 cal/cm²	Back Pack
9150-52609	Jacket & Overall	9100-52680 & 9100-53680	2-Piece Set	9150-52685	33 cal/cm²	Carry Bag
9150-21712	Jacket & Overall	9100-21780 & 9100-52564	2-Piece Set	9150-52685	33 cal/cm²	Back Pack



40-100 CAL ARC KITS

Serious protection demands serious products. PIP has worked to develop multiple kits for high risk environments. Together with you, we can help you meet compliance regulations by offering you turn-key kits. (Insulating glove kits and arc rated hearing protection are not included).

PPE 4 ARC PROTECTION KITS

ITEM NUMBER	CLOTHING	CLOTHING STYLE NUMBER	FEATURE	HOOD	ARC RATING	STORAGE BAG
9150-54VULT	Jacket & Overpant	9100-524ULT & 9100-530ULT	Ultralight	9150-5236V	40 cal/cm ²	Carry Bag
9150-54VULTB	Jacket & Overpant	9100-524ULT & 9100-530ULT	Ultralight	9150-5236V	40 cal/cm ²	Back Pack
9150-540ULT	Jacket & Overpant	9100-524ULT & 9100-530ULT	Ultralight	9150-523ULT	40 cal/cm²	Carry Bag
9150-540ULTB	Jacket & Overpant	9100-524ULT & 9100-530ULT	Ultralight	9150-523ULT	40 cal/cm ²	Back Pack
9150-52436	Jacket & Overall	9100-52412 & 9100-52422	2-Piece Set	9150-52850	40 cal/cm ²	Carry Bag
9150-52436B	Jacket & Overall	9100-52412 & 9100-52422	2-Piece Set	9150-52850	40 cal/cm ²	Back Pack
9150-75050	Jacket & Overall	9100-75000 & 9100-75001	2-Piece Set	9150-75002	75 cal/cm²	Carry Bag
9150-75050B	Jacket & Overall	9100-75000 & 9100-75001	2-Piece Set	9150-75002	75 cal/cm²	Back Pack
9150-52730	Jacket & Overall	9100-52750 & 9100-53750	2-Piece Set	9150-52689	100 cal/cm²	Carry Bag
9150-52730B	Jacket & Overall	9100-52750 & 9100-53750	2-Piece Set	9150-52689	100 cal/cm²	Back Pack



ARC FLASH HEAD GEAR

REPLACEMENT SHIELDS & ACCESSORIES



ADAPTERS & STORAGE BAGS



ITEM NUMBER	ARC RATING	MATERIAL	FITS	CHIN CUP COLOR	INCLUDES
9400-53512	12 cal/cm²	Polycarbonate	Full Brim	☐ Transparent	Mounting Bracket
9400-53520	20 cal/cm ²	Polycarbonate	Full Brim	☐ Transparent	Mounting Bracket
9400-53514	12 cal/cm²	Polycarbonate	Cap Style	☐ Transparent	Mounting Bracket
9400-53524	20 cal/cm ²	Polycarbonate	Cap Style	☐ Transparent	Mounting Bracket
9400-53502	12 cal/cm²	Polycarbonate		☐ Transparent	Replacement Shield
9400-53504	20 cal/cm ²	Polycarbonate		☐ Transparent	Replacement Shield
9400-52505	12 cal/cm²	Polycarbonate	Cap Style	■ Blue	Clip Mount
9400-52511	20 cal/cm ²	Polycarbonate	Cap Style	■ Blue	Clip Mount
9400-52501	12 cal/cm²	Polycarbonate	Universal	■ Blue	Elastomeric Hard Hat Attachment
9400-52507	20 cal/cm ²	Polycarbonate	Universal	■ Blue	Elastomeric Hard Hat Attachment
9400-52502	12 cal/cm ²	Polycarbonate		■ Blue	Replacement Shield
9400-52504	20 cal/cm ²	Polycarbonate		■ Blue	Replacement Shield

ARC PROTECTIVE ACCESSORIES (NFPA 70E, ASTM F2178, ANSI Z87+S)

ITEM NUMBER	MATERIAL	DESCRIPTION
9400-52503	Nylon	Cap Style Hard Hat Adapter
9400-52506	Nylon	Full Brim Hard Hat Adapter with Elastomeric Band
9400-80016	Nylon	Universal Hard Hat Adapter with Elastomeric Band
9400-52509	Cotton	Premium Arc Shield Storage Bag with Pull Cord Closure
9400-52508	Cotton	Arc Shield Storage Bag with Pull Cord Closure





Hard hat not included



INCORPORATES
UV AND IR ABSORBING
ARC SHIELD LENS
PROVIDING PROTECTION
UP TO 100 CAL/CM²

GREEN TINT WINDOW ISCOATED WITH A PERMANENT ANTI-FOG INNER SURFACE

Arc Shield Replacement Window

Arc Shield Replacement Window

Arc Shield Replacement Window

ELECTRICAL ARC HOODS (NFPA 70E, ASTM F1506)

ITEM NUMBER	WEIGHT	LAYERS	MATERIAL	PPE CAT.	ARC RATING	DESCRIPTION
9150-52548	9 oz.	1	Cotton / Nylon	2	12 cal/cm²	Includes Arc Shield, Hard Hat, etc.
9150-52515	7 oz.	2	Cotton / Nylon	3	25 cal/cm²	Includes Arc Shield, Hard Hat, etc.
9150-52685	9 oz.	2	Cotton / Nylon	3	33 cal/cm²	Includes Arc Shield, Hard Hat, etc.
9150-5236V	8 oz. / 6 oz.	2	Protera® / Ultrasoft®	4	40 cal/cm²	Includes Arc Shield, Hard Hat, etc.
9150-523ULT*	8 oz. / 6 oz.	2	Protera® / Ultrasoft®	4	40 cal/cm²	Includes Arc Shield, Hard Hat, etc.
9150-52850	9 oz. / 13 oz.	2	Cotton / Nylon	4	40 cal/cm²	Includes Arc Shield, Hard Hat, etc.
9150-75002	13 oz. / 5.5 oz. 13 oz. / 5.5 oz.	4	Cotton / Nylon	4	75 cal/cm²	Includes Arc Shield, Hard Hat, etc.
9150-52689		Multi	Ultrasoft® / High Tenacity Nylon	4	100 cal/cm²	Includes Arc Shield, Hard Hat, etc.
FLECTRICAL ARC HOOD REPLACEMENT WINDOWS (NEPA 70F ASTM F2178 ANS) 787+\$)						

Polycarbonate

Polycarbonate

Polycarbonate

ULTRALIGHT

9400-52517

9400-52686

9400-52699

6.4 oz.

9.6 oz.



ARC FLASH HEAD GEAR

ARC FLASH ACCESSORIES

HOODS / BAGS / EYEWEAR





ARC RATED PROTECTION BALACLAVAS

ITEM NUMBER	COLOR	WEIGHT	LAYERS	MATERIAL	PPE CATEGORY	ARC RATING
385-FRBL-11-NV 385-FRBL-11-OR	□ Navy ■ Orange	6.5 oz.	Single	FR Cotton Knit	2	11.8 cal/cm²
9100-HDFR12	□ Navy	8.5 oz.	Single	Pro-C FR Westex® Ultrasoft®	2	12.1 cal/cm²
9100-HDFR15	■ Navy	8.5 oz.	Single	FR Cotton Rib	2	15.1 cal/cm²
385-HDFR13-NV 385-HDFR13-OR	□ Navy □ Orange	13 oz.	Double	FR Cotton / Nylon Knit	3	32.4 cal/cm²





ESP KIT STORAGE BAGS

ITEM NUMBER	COLOR	STYLE	MATERIAL	FEATURE	CLOSURE	SIZE
9400-52514	Orange	Back Pack	600 D Polyester	Insulating Glove Pocket	Drawcord & Buckle	20"L x 8"W x 15"H
9400-52599	Orange	Carry Bag	600 D Polyester	Molded Rubber Bottom	Zipper	24"L x 10"W x 13"H

