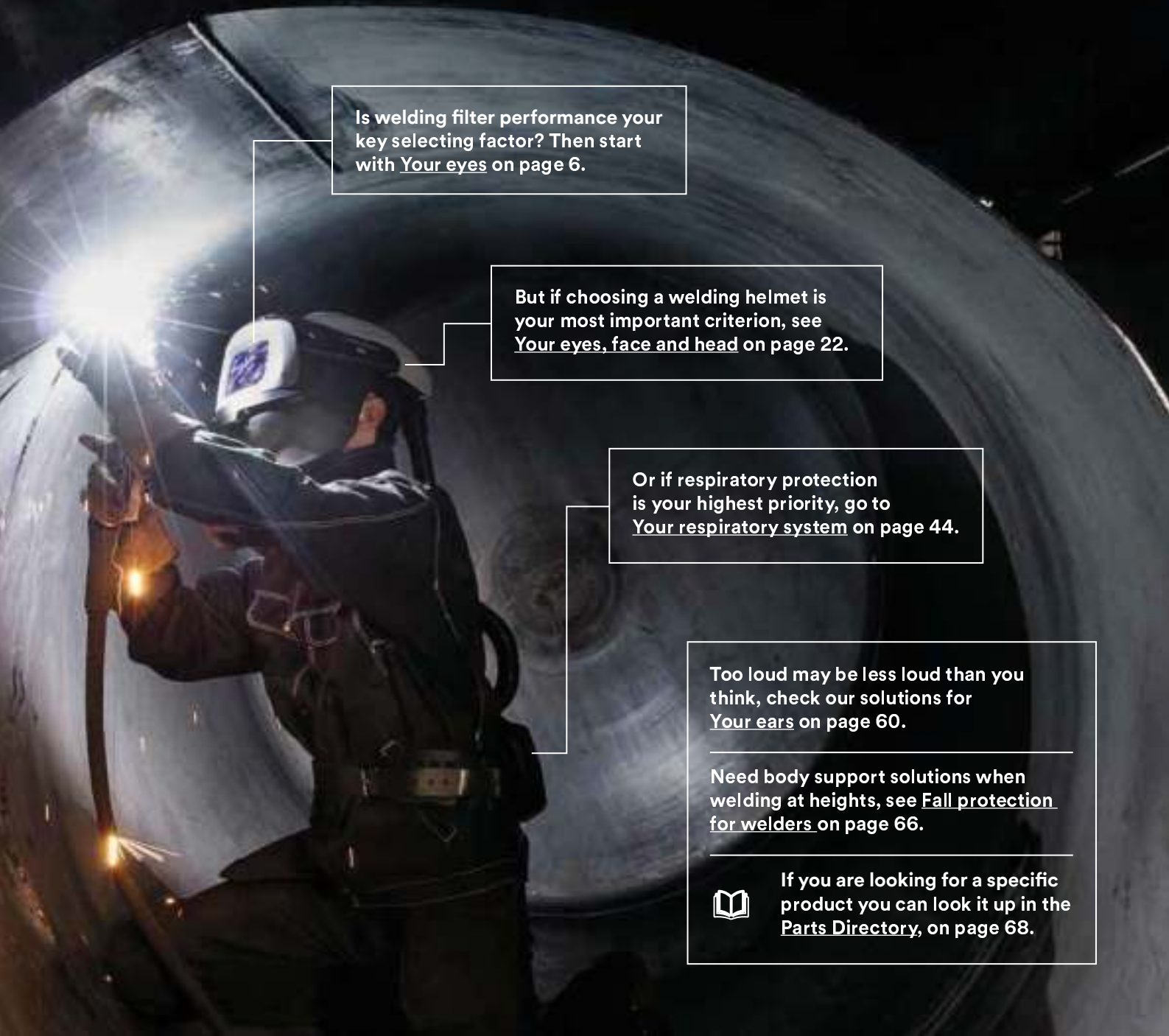

3M
Speedglas™
Welding Safety
PLASMASERV
3M™ Speedglas™ Welding Safety Catalogue 2018
Take control of your personal environment
3M Science. Applied to Life.™

How to find your customized welding helmet combination

We have compiled - into this one, easy-to-reference catalogue - much of the information you'll need to select specific welding safety products and/or entire welding PPE systems.

From the choices below, pick your key selecting factor and then go directly to that chapter. Or try our main selection guide on page 24.



Is welding filter performance your key selecting factor? Then start with Your eyes on page 6.

But if choosing a welding helmet is your most important criterion, see Your eyes, face and head on page 22.

Or if respiratory protection is your highest priority, go to Your respiratory system on page 44.

Too loud may be less loud than you think, check our solutions for Your ears on page 60.

Need body support solutions when welding at heights, see Fall protection for welders on page 66.

If you are looking for a specific product you can look it up in the Parts Directory, on page 68.

Your responsibility – our solutions...

Typically, professional welders know about the hazards to their eyes and faces. But other hazards – like welding fumes – are sometimes not so well known.

It is the responsibility of the employer to identify any hazards in a work environment, and to provide the workers with adequate protection.

Hazards must be adequately explained. Then the choice of protective can be equipment made after joint consultations between employers and employees.

1. Identify the hazards

Make a list of all the risks in your welding environment (radiation, sparks, fumes, noise, trip hazards, falling objects, etc). 3M can help identify consultants and measurement tools.

2. Assess the risk levels

By evaluating every risk, you can prioritize their prevention. See more details in each section of this catalogue. If there are any doubts or ambiguities, always consult a professional safety engineer.

3. Select the right type of equipment

Determine your protection based on equipment type (e.g., eye, face, head, hearing), the level of protection needed to work in a specific application, and your users' preferences. Personal preferences - key to user acceptance - covers issues including comfort, style, and ease of maintenance.

4. Training, motivation and maintenance

For maximum benefit from any piece of PPE, it pays to focus on user acceptance and proper use. 3M can help:

- On-site training by 3M personel or a visit from our Welding Safety Caravan. We'll show you equipment options based on your needs.
- 3M eAcademy - the flexible way to discover and learn throughout your busy day: **www.3m.com/3M/en_US/3m-academy/log-in**
- Other techniques, such as Toolbox Talks, educational posters for your facilities, online videos, etc.

ⓘ For further details please visit www.speedglas.com and select your country to find local welding safety information from 3M.

I do precise *grinding*

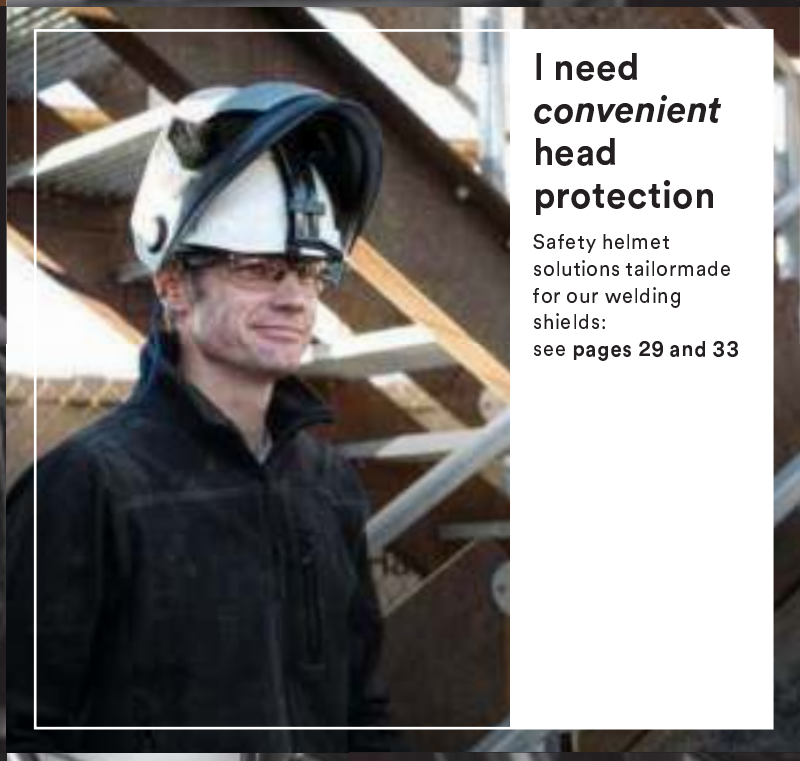
Check out our welding helmets with flip-up visors, they have a curved, clear protective visor underneath the welding filter:
see **page 31–33**

I want to see around me

We recommend our welding helmets with side windows that widen your field of vision when welding:
see **page 26**

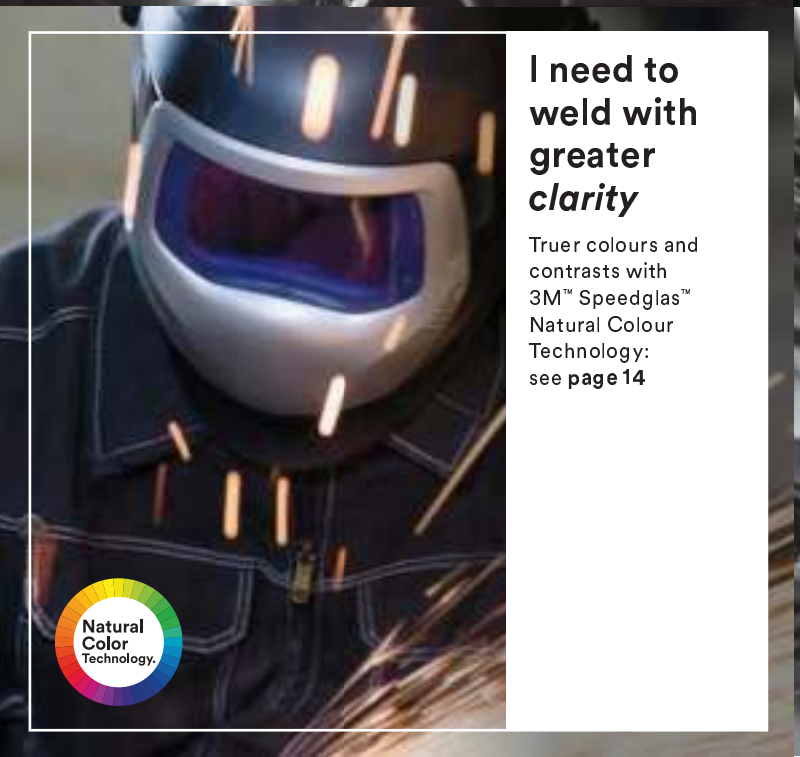
I want to breathe *fresh air*

Our powered respirators are a favorite among many welders:
see **page 44**



I need *convenient* head protection

Safety helmet solutions tailormade for our welding shields:
see **pages 29 and 33**



I need to weld with greater *clarity*

Truer colours and contrasts with 3M™ Speedglas™ Natural Colour Technology:
see **page 14**

I like *lightweight* welding helmets

Great! Try our most lightweight auto-darkening welding helmet: Speedglas SL,
see **page 36**

Improving upon what the welder sees

Your goal is to weld consistently great welds. Our goal is to provide you with full-time eye and face protection.

“Because we make many of our own welding filter components, we can readily test and transfer new technologies,” says Kristina Magnusson, Senior Optics Specialists at the 3M Welding Centre of Excellence. “And, of course, we also have much better control over the entire manufacturing process.”

Kristina is one of the Centre’s four full-time optics specialists. Her responsibilities include liquid crystal cells, polarizers, and interference (UV/IR) filters. She also leads an international ISO task group of experts focused on eye and face protection standards for auto-darkening welding filters.

Like many of her co-workers at the Centre, Kristina is a long-time employee. “I had just got my master’s degree in engineering physics with a focus on optics when I was recruited to develop test instruments to measure the light diffusion of Speedglas welding filters. I’ve been here ever since.

"Of course, safety is the prime consideration when it comes to welding PPE. But the 3M optics team aims to help welders even more by continuously improving the optical experience of our welding filters. “We’re constantly exploring new optical technologies that we can leverage to the welder’s advantage.”

How auto-darkening filters work

Before:

With the helmet in the safe down position, you have a clear view through the welding filter. Both of your hands are free and the electrode can be precisely positioned.

During:

Within 0.1 milliseconds of the arc strike (3M™ Speedglas™ Welding Filters, see page 13), the filter has switched to the dark state.

After:

The filter automatically returns to the clear state after welding is complete, allowing your immediate and safe inspection of the weld pool, as well as preparation for the next weld.

What other equipment pays for itself in two months?

Not only can you weld faster when you can see more clear, but your entire movement around your workpiece can become more efficient when you're not constantly having to raise and lower your shield.

We've studied welders and their increased efficiency when using our auto-darkening filters (ADFs) for almost four decades:

- The shorter the weld, the greater the productivity increase. Not surprising, applications requiring lots of tack welds have the most to gain.
- Where the final appearance of the weld is critical – for example, on high-value items – reduction in scrap alone (e.g., from bad starts) can quickly pay for our helmets.
- Since most welders do a combination of tack and longer welds, we use an estimate of 15% gain in productivity. Of course, results may vary depending on your specific operation.

So, for example, if you're paying a welder €20 per hour, a 15% improvement in productivity will pay for a €450 helmet in about two months and result in a year-end increase in savings (new profits) of €4500 when compared to continuing to use passive filters.

$28,280

Average cost of injuries to the face, including disabling and non-disabling eye injuries.[1)]

20,300

Lost work days in 2012[1)]

Ask yourself

Are you doing everything possible to maximize the amount of time your welders have their shield in the safe, down position?

1) Source: US National Safety Council's Injury Facts, 2015

A sample decision tree when selecting ADF

1. **Would you benefit from seeing more natural colours and contrasts?**
The 3M™ Speedglas™ Auto-darkening Filters 9100XXi and 9002NC both allow you to more readily recognize colours. The light state is still shade 3, but the filter appears lighter, more detailed, and better able to view contours. More details on page 14–15.

2. **Do you occasionally change shade numbers?**
If yes, you have plenty of models to pick from: all of our auto-darkening filters have variable (selectable) dark shades, as shown in the table on page 13.

3. **What does your welding process require from your filter?**
This is a key decision factor. Using the table on page 13, pick a model that does well in the processes you use frequently.

   You might want to also consider your needs for specific dark shade levels, light-to-dark switching sensitivity, and dark-to-light delay options which are features that vary from model to model.

4. **How important is the size of welding filter's viewing area?**
For many welders, the ability to see more of their workpiece without moving their helmet or head is very important. For these “big picture” people, the 9100XX or 9100XXi models will be most appropriate.

5. **Do you do a lot of tack welding?**
Then our tack welding comfort mode may be for you. The comfort mode setting may help reduce eye fatigue caused by your eye constantly adjusting to differing light levels during tack welding. It's available on 9100XX, 9100X and 9100V filters.

Recommended shade numbers according to EN 379:2003

Welding process	Current in amperes A																				
	1.5	6	10	15	30	40	60	70	100	125	150	175	200	225	250	300	350	400	450	500	600
MMA (covered electrodes)	8							9		10		11		12			13				14t
MAG	8								9	10		11			12			13			
TIG			8			9			10		11			12		13					
MIG									9		10		11			12		13	14		
MIG with light alloys											10		11		12		13		14		
Air-arc gouging	10											11		12		13		14			15
Plasma jet cutting										9		10		11		12		13			
Microplasma arc welding		4		5		6		7		8		9		10		11		12			
	1.5	6	10	15	30	40	60	70	100	125	150	175	200	225	250	300	350	400	450	500	600

The table recommends best dark shade of welding filter for various working applications.
According to the conditions of use, the next greater or the next smaller scale number can be used.

3M™ Speedglas™ Auto-Darkening Filters

Selector table

● Best[1] ● Better[1] ● Good[1] × Not Recommended[1]

Specification	9100XXi	9100XX	9100X	9100V	SL	9002NC	100V	10V
MMAW (electrode)	●	●	●	●	●	●	●	●
MIG/MAG	●	●	●	●	●	●	●	●
TIG (>20A)	●	●	●	●	●	●	●	●
TIG (1A-20A)	●	●	●	●	●	●	×	×
Plasma (welding and cutting)	●	●	●	●	●	●	×	×
Risk for hidden arc	●	●	●	●	●	●	×	×
Tack welding	●	●	●	●	●	●	●	●
Grinding	●	●	●	●	×	●	●	●
3M™ Speedglas™ Natural Colour Technology	Yes	No				Yes	No	
Switching time, dark-light	40–800 ms	40–1 300 ms			60–250 ms	60–400 ms	40–250 ms	60–250 ms
Switching time, light -dark	0,1 ms (+23° C)							
Dark state	Shade 5, 8, 9–13				Shade 8–12			
Light state	Shade 3							
UV/IR Protection (permanent)	Shade 13				Shade 12			Shade 13
Viewing area, approx. (mm)	73×107		54×107	45×93	42×93	54×107	44×93	
External grinding mode control	Yes[2]	No						
Auto ON	Yes	No			Yes	No		
Solar cell	No		Yes		No			
Battery lifetime (hours)	1 800	2 000	2 500	2 800	1 500	2 000	1 500	
Number of sensors (arc detection)	3				2			
Classification	1/1/1/2				1/1/1/2	1/1/1/2	1/2/2/2	1/2/2/2
Approval (welding filter)	EN 379							

1) The ratings (best - better - good - not recommended) above refer to the products listed in this chart and should be seen as general recommendations based on differences in product comfort features and configuration options when using these selected Speedglas welding helmet series.
2) When used with the front cover 9100XXi and the 3M™ Speedglas™ Welding Helmets 9100, 9100-QR or 9100-Air, see page 28.

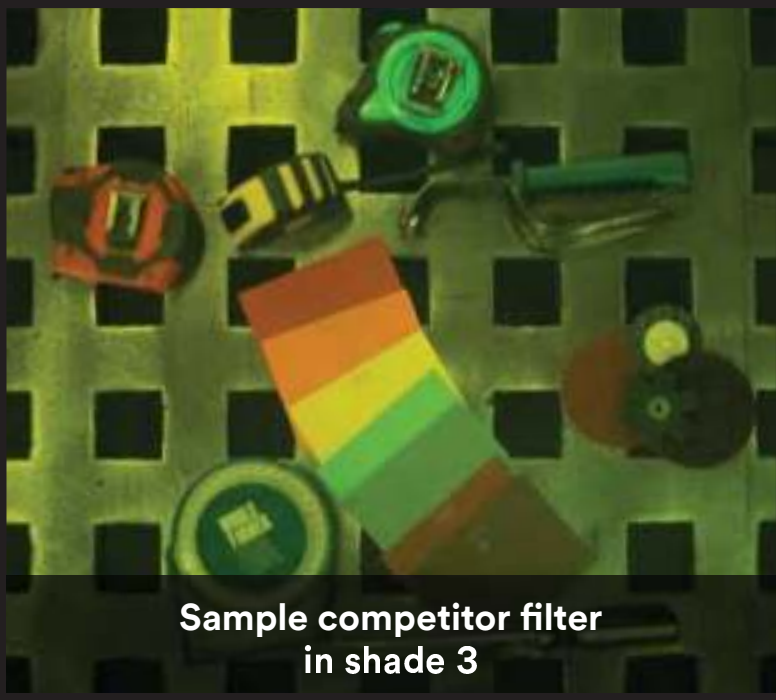
Natural Color Technology.

Still seeing green?

Imagine what more realistic-looking colours and details could do for you:

- Provide better control of your weld puddle – with a view that appears lighter, brighter, and more realistic.
- Help you focus on your welding set-up, welding technique, and inspection of just-completed welds.
- Give you a clearer view of coloured welding machine controls – even with your helmet in the safe, down position.

See the difference!



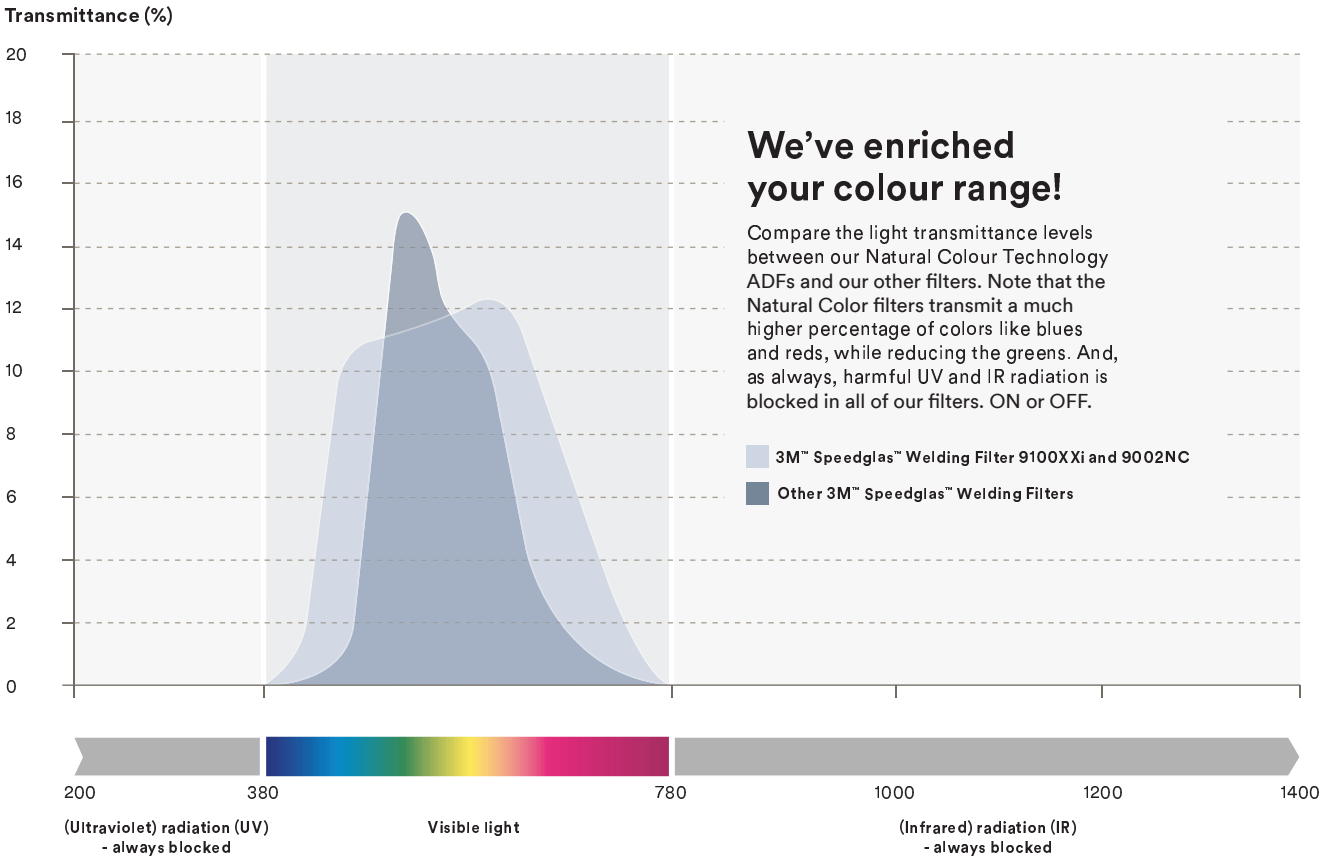
Sample competitor filter in shade 3

9100XXi and 9002NC filters in shade 3

“

The view seems lighter and less green – I can see colours far better! Even in the dark state, I see contours better.

Veteran Welder



Great clarity before, during and after welding when using the 3M™ Speedglas™ Welding Filters 9100XXi or 9002NC. Such clarity can be great for seeing the nuances of curved joints.

ADF specifications: page 16 | Helmet selector: page 42

Your choice of auto-darkening filters (ADF)

The 3M™ Speedglas™ Welding Filter Series 9100 continues our tradition of outstanding optical quality, including uniform shading and minimal distortion across the entire filter viewing area.

By selecting just the right setting for each task, you can reduce eye strain and improve the quality of every weld.

Our top-of-the-line ADF

3M™ Speedglas™ Auto-Darkening Filter 9100XXi:

- See your welds in a new light, with more contrast and natural-looking colours.
- Grab and go welding with Auto-ON.
- 73×107 mm viewing area.
- Dark shades 5, 8, and 9 through 13.
- Delay settings allow the welder to extend the dark state for when the weld pool is still cooling.
- For all 3M™ Speedglas™ Welding Helmet Series 9100. See page 26-33.
- When used with the special 9100XXi Silver Front Panel and the Speedglas Welding Helmets 9100, 9100-Air and 9100-QR, you'll have access to the external control for both grinding and the memory modes. More details **on page 29**.

3M™ Speedglas™ Auto-Darkening Filter 9100XX

- 73×107 mm viewing area.
- Dark shades 5, 8, and 9 through 13.
- Any shade can be locked-in.
- The tack welding comfort mode may help reduce eye fatigue resulting from the eye constantly adjusting to differing light levels during tack welding. Using an intermediate light state (shade 5).
- The delay function allows the welder to set the recovery delay of the welding filter from dark to light according to welding method and current.
- For all 3M™ Speedglas™ Welding Helmet Series 9100. More information **on page 26–33.**

3M™ Speedglas™ Auto-Darkening Filter 9100X

- 54×107 mm viewing area.
- Dark shades 5, 8, and 9 through 13.
- Any shade can be “locked-in.”
- The tack welding comfort mode may help reduce eye fatigue resulting from the eye constantly adjusting to differing light levels during tack welding. Using an intermediate light state (shade 5).
- The delay function allows the welder to set the recovery delay of the welding filter from dark to light according to welding method and current.
- For all 3M™ Speedglas™ Welding Helmet Series 9100. More information **on page 26–33.**

3M™ Speedglas™ Auto-Darkening Filter 9100V

- 45×93 mm viewing area.
- Dark shades 5, 8, and 9 through 13.
- Any shade can be “locked-in.”
- The tack welding comfort mode may help reduce eye fatigue resulting from the eye constantly adjusting to differing light levels during tack welding. Using an intermediate light state (shade 5).
- The delay function allows the welder to set the recovery delay of the welding filter from dark to light according to welding method and current.
- For all 3M™ Speedglas™ Welding Helmet Series 9100. More information **on page 26–33.**

3M™ Speedglas™ Auto-Darkening Filter 9002NC

See your welds in a new light, with more contrast and natural-looking colours.

- 54×107 mm viewing area.
- Dark shades 8 through 12.
- For 3M™ Speedglas™ Welding Helmet series 9002NC" compatible with the old 9000 series welding helmets, more information **on page 34–35.**

3M™ Speedglas™ Auto-Darkening Filter SL

Our most lightweight auto-darkening filter.

- 42×93 mm viewing area.
- Dark shades 8 through 12.
- For 3M™ Speedglas™ Welding Helmet SL, more information **on page 36–37.**

3M™ Speedglas™ Auto-Darkening Filter 100V

- 44×93 mm viewing area.
- Dark shades 8 through 12.
- For 3M™ Speedglas™ Welding Helmet Series 100 (incl 100-QR), more information **on page 38.**

3M™ Auto-Darkening Filter 10V

- 44×93 mm viewing area.
- Dark shades 8–12.
- For 3M™ Welding Helmet 10V and 10QR, more information **on page 39.**

All our auto-darkening welding filters conform to European Standard EN 379 (Personal Eye-Protection – Automatic Welding Filters) as well as other national standards in USA, Canada and Australia – to name a few. Valid standard, optical classification and shade range are marked on the welding filter.

There is no one perfect welding helmet

We have populated our helmet matrix with carefully considered design blends of protection, features, personal preferences, and performance to address many common application needs.

But for every helmet system we design, we have four driving factors:

Reliability

We know harsh welding environments: We build our products to thrive in them. From creating reliable arc sensing/ shade switching to selecting highly durable materials to designing for long-lasting mechanical operation.

Comfort

Comfort means a helmet that vents stagnant air. It means a headband that avoids scientifically determined pressure points around your head. And how a helmet provides industrial grade eye and face protection while being comfortable for a full shift.

Protection

UV/IR radiation. High speed grinding particles. Falling objects. Lung disease. List your workplace hazards - then find the right Speedglas helmet, accessories, and respiratory protection. Have a unique workplace hazard? Contact your local distributor for even more 3M solutions.

View

Every helmet design detail can affect your view. That's why we provide high-performance auto-darkening welding filters, our side windows lenses, and large, protective clear visors. Each of these, and many more, helmet design elements maximise your ability to see.

ⓘ Don't just take our word for it, experience our welding helmets yourself by signing up as a Speedglas test pilot at: **goo.gl/vuEtb3** (connect using mobile device).

3M™ Speedglas™ Welding Helmets
9100, 9100-Air and 9100 QR

Simplify your workflow

The 9100XXi kit (special front and welding filter) houses external controls – enabling convenient, “gloves-on” memory mode switching – to help you weld, grind and see your finish.

Transform your safety helmet

As you attach and detach the 9100-QR helmet, you don't need to remove your safety helmet – so your head is protected at all times.

Extend your coverage

With our optional flame-retardant headcovers and ear/neck protectors.

3M™ Speedglas™ Welding Helmets 9100, 9100-Air and 9100-QR

High-performance and comfort

Features [1]	9100	9100-AIR	9100-QR
Mechanical strength (EN 166, EN 175)	CLASS B	CLASS B	CLASS B
Side windows	✓	✓	✓
Auto-ON	✓ [2]	✓ [2]	✓ [2]
Exhaust vents	✓		✓
Flip-up			
Graphics option			
Head protection			✓
Natural Colour Technology	✓ [2]	✓ [2]	✓ [2]
Powered Air EN 12941 NPF		TH2 50	
Supplied Air EN 14594 NPF		3B 200	

1) More details about the features referenced, see page 102.
2) Only in combination with 3M™ Speedglas™ Welding Filter 9100XXi.

9100

9100-Air

9100-QR

Protecting your eyes and face from radiation, heat and sparks – while providing a precise view of your work – makes your Speedglas welding helmet 9100 one of your most important welding tools.

All of these benefits can be used with powered or supplied air respiratory protection in combination with the Speedglas welding helmet 9100-Air.

If your work situation requires head protection, test out our Speedglas welding helmet 9100-QR. It quickly attaches to many of the industry's most popular safety helmets, including the 3M™ Safety Helmet H-701.

Helmet specifications: page 42 | ADF specifications: page 16–17 | Respiratory systems: page 82 | Ordering & part info: page 68

Comfortable all shift long

Versatile protection and long-lasting comfort. The 9100 FX-Air helmet readily connects to either our powered or supplied air respirators.

Stay protected

TH3-rated respiratory protection.

Expand your view:

A quick lift of the front cover and you get a big, 17×10 cm, clear view – perfect for precision grinding, even in low light conditions.

More natural colours and contrasts

The Speedglas welding filter 9100XXi helps you see your welds in a new light, providing more contrast and natural-looking colours.

3M™ Speedglas™ Welding Helmets 9100 FX and 9100 FX-Air

Flip up to wider views

Features [1]	9100 FX	9100 FX-AIR
Mechanical strength (EN 166, EN 175)	CLASS B	CLASS B
Side windows	✓	✓
Auto-ON	✓ [2]	✓ [2]
Exhaust vents	✓	
Flip-up	✓	✓
Graphics option		
Head protection		
Natural Colour Technology	✓ [2]	✓ [2]
Powered Air EN 12941 NPF		TH3 500
Supplied Air EN 14594 NPF		3B 200

1) More details about the features referenced, see page 102.
2) Only in combination with 3M™ Speedglas™ Welding Filter 9100XXi.

9100 FX

9100 FX-Air

Wider field of view with flip-up front – a combination welding helmet and protective visor.

A quick lift of the front and you get a big, 17×10 cm clear view – excellent for precision grinding in low-light conditions.

And if you use the 9100 FX-Air model, the clear view from the curved visor lets you keep your respiratory protection in place at all times.

Helmet specifications: page 42 | ADF specifications: page 16–17 | Respiratory systems: page 82 | Ordering & part info: page 68

Weld with confidence

Head, eye, face, hearing and respiratory – we've seamlessly integrated five levels of welder protection into one easy-to-use system.

See more of your work

A large (17×10 cm) curved protection visor with excellent views up, down, and side-to-side.

Extend coverage

All-new accessory shroud covers front and back of neck and shoulders, as well as upper chest and back. See page 40.

3M™ Speedglas™ Welding Helmets 9100MP and 9100 MP-Lite

Multiple levels of protection

Features [1]	9100 MP	9100 MP-Lite
Mechanical strength (EN 166, EN 175)	CLASS B	CLASS B
Side windows	✓	✓
Auto-ON	✓ [2]	✓ [2]
Exhaust vents		
Flip-up	✓	✓
Graphics option		
Head protection	EN 397	EN 812
Natural Colour Technology	✓ [2]	✓ [2]
Powered Air EN 12941 NPF	TH3 500	TH3 500
Supplied Air EN 14594 NPF	3B 200	3B 200

1) More details about the features referenced, see page 102.
2) Only in combination with 3M™ Speedglas™ Welding Filter 9100XXi.

9100 MP
with safety helmet

9100 MP-Lite
with bump cap

Natural Color Technology.

Have you tried multi-protection systems where some component seemed to clash with the other components?

That's why we built our 3M™ Speedglas™ Systems 9100 MP (multi-protection) just for welders. You can now work in a highly integrated, comfortable, protective envelope, with big, wide views as you weld, prep and grind.

Impact protection
9100MP

≈20% lighter
9100MP-Lite

Easy tightening

The head suspension features a smooth ratchet for easy tightening – even while wearing gloves!

Light in weight, strong in performance

A slim and narrow helmet design, with an accompanying lightweight auto-darkening filter that's suitable for most arc welding processes.

Great for fast tasks

Designed specifically for quick welding tasks, a motion sensor automatically turns ON the welding filter when you pick up the helmet.

3M™ Speedglas™ Welding Helmet SL

Light, narrow and fast

Features [1]	SL
Mechanical strength (EN 166, EN 175)	CLASS F
Side windows	
Auto-ON	✓
Exhaust vents	
Flip-up	
Graphics option	
Head protection	
Natural Colour Technology	
Powered Air EN 12941 NPF	
Supplied Air EN 14594 NPF	

1) More details about the features referenced, see page 102.

Light weight – only 370 gram
(including auto-darkening welding filter)

Did you know that some lightweight welding helmets can actually absorb moisture and become heavier over time? We took care to avoid that problem by making our SL (super light) helmet from strong, non-absorbent materials (also applicable for the 9100 series helmets).

We also designed a special auto-darkening filter to make both the ADF and the helmet weight a mere 370 grams – 25% lighter than any other Speedglas model.

3M™ Speedglas™
Welding Helmet Series 100 and 100-QR

Weld with personality

Features [1]	100	100-QR
Mechanical strength (EN 166, EN 175)	CLASS B	CLASS B
Side windows		
Auto-ON		
Exhaust vents		
Flip-up		
Graphics option	✓	
Head protection		✓
Natural Colour Technology		
Powered Air EN 12941 NPF		
Supplied Air EN 14594 NPF		

1) More details about the features referenced, see page 102.

100 Skull
The 100 helmet shown with the new Skull graphics option; standard color is black.

100-QR
with safety helmet

Get your career off to a great start with high-performance eye and face protection!

Now with a new option for head protection – the 3M™ Speedglas™ Welding Helmet 100-QR (quick release).

Want to stand out?

Make an impactful statement with one of our powerful, distinctive graphic designs. Find them all on page 78.

Variable shades for flexibility

Five adjustable dark shades 8–12. A lockable shade 3 light state for grinding. And three sensitivity settings for customized light-to-dark switching, lock-in shade 3 light state.

3M™ Welding Helmet 10V and 10-QR

Basic functions in a robust design

Features [1]	10V	10-QR
Mechanical strength (EN 166, EN 175)	CLASS B	CLASS B
Side windows		
Auto-ON		
Exhaust vents		
Flip-up		
Graphics option		
Head protection		✓
Natural Colour Technology		
Powered Air EN 12941 NPF		
Supplied Air EN 14594 NPF		

1) More details about the features referenced, see page 98.

10V

10-QR
with safety helmet

Designed for all-round MIG/MAG and MMAW (electrode or “stick”) welding, with user selectable dark shades of 10, 11 or 12.

Confident protection

Robust, industrial helmet design. Complies to the European Standards EN 175, EN 166 and EN 379.

Performance made affordable

Auto-darkening filter performance at a price that won’t break the bank.

We got you covered

Every welder is different, and each day your tasks can change. As the owner of a 3M™ Speedglas™ Welding Helmet, you have a variety of accessories available to maximize your protection and comfort.

Plus, we now offer a new generation of additional coverage products made in flame-retardant textiles for protection against molten metal, sparks and flames.

Quick guide to extend your protection

3M™ Speedglas™ Welding Helmet	9002NC	100	SL	9100 + 9100-Air	9100FX + 9100 FX-Air	9100-QR 100-QR 10/10-QR	9100 MP 9100 MP-Lite
Head protection (Part No)	16 40 09			16 90 05	16 90 07 (large) 16 90 06 (small)	–	16 90 14
Material	Cotton / Para-aramid			Cotton / Para-aramid	Cotton / Para-aramid	–	Reflective
Neck protection (Part No)	16 90 01[1)]			16 90 10		16 40 05	16 90 15
Material	Cotton / Para-aramid			Cotton / Para-aramid		Leather	Cotton/ Para-aramid
Hood (Part No)	16 91 00					–	–
Material	Cotton / Para-aramid					–	–
Breathing tube cover (Part No)	–			83 40 18		–	83 40 18
Material	–			Flame-retardant		–	Flame-retardant

1) Alternative neck protection available in leather (part no 16 40 05).

Time to upgrade your visibility?

Getting too close to your arc?

Start with the easiest solution first: replace your filter's outer protection plates more frequently!

If you still can't see the detail you need, try one of our magnifying lenses. They come in x1.0, x2.0 and x3.0 strengths. For details, see the Accessories and Spare Parts section for each helmet.

Need an even darker shade?

Welding at very high amperages can create such an intense weld pool that you may feel eye strain, even when using a dark shade selection. On the welding filter series 9100, 9000 and 100, you can replace the standard (clear) inner protection plate with either our +1 or +2 shade plates. For details, see page 69.

System	Component	Typically replaced	Notes
Welding filters	Outer protection plate	Once a week	Replace anytime the plate becomes deeply pitted, scratched or too dirty to clean with soft cloth or lens paper
Welding filters	Inner cover plate	Once a month	Regularly clean with a soft cloth and replace if any pits or scratches occur.
Welding helmets	Visor plate	Every two weeks	Replace more often if visibility is reduced.
Welding helmets	Sweatband	Once a month	Replace more often if sweatband becomes unhygienic.
Welding helmets with respirator	Face seal	At least every 2 months	Replace earlier in dirty environments or whenever the seal becomes unhygienic.
Welding helmets with respirator	Breathing tube	If damaged, deformed or leaking any air	To extend the life of breathing tube, use a tube cover or a heavy-duty rubber breathing tube.

Important information. Note that higher-than-normal levels of pollutants, heat, and sparks will require more frequent replacements of components. Chart assumes minimum 4 hours usage per day. Ordering information for each series of welding helmet can be found in the Parts Directory, page 68.