Central European Journal of Energetic Materials
ISSN 1733-7178; e-ISSN 2353-1843
Supporting Information (SI) for *Cent. Eur. J. Energ. Mater.* 2023, *20*(4): 400-416
DOI: 10.22211/cejem/176911

Supporting Information is available in PDF-format at:
https://ipo.lukasiewicz.gov.pl/wydawnictwa/cejem-woluminy/vol-20-nr-4/

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Research paper

Influence of a non-Explosive Filling Included in the Conical Liner Cavity of a Shaped Charge on its Penetrative Capability

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1 Test results for the shaped charge (SC) from PG-7WM grenade (without filler in the conical liner)

(a)

(b)

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(c)

Figure S1. Penetration of armored plates produced by the cumulative jet generated by the PG-7WM SC (without filler): inlet (row (a)) and outlet (rows (b) and (c)); from the left: plate 1, 2, 3 and witness plate

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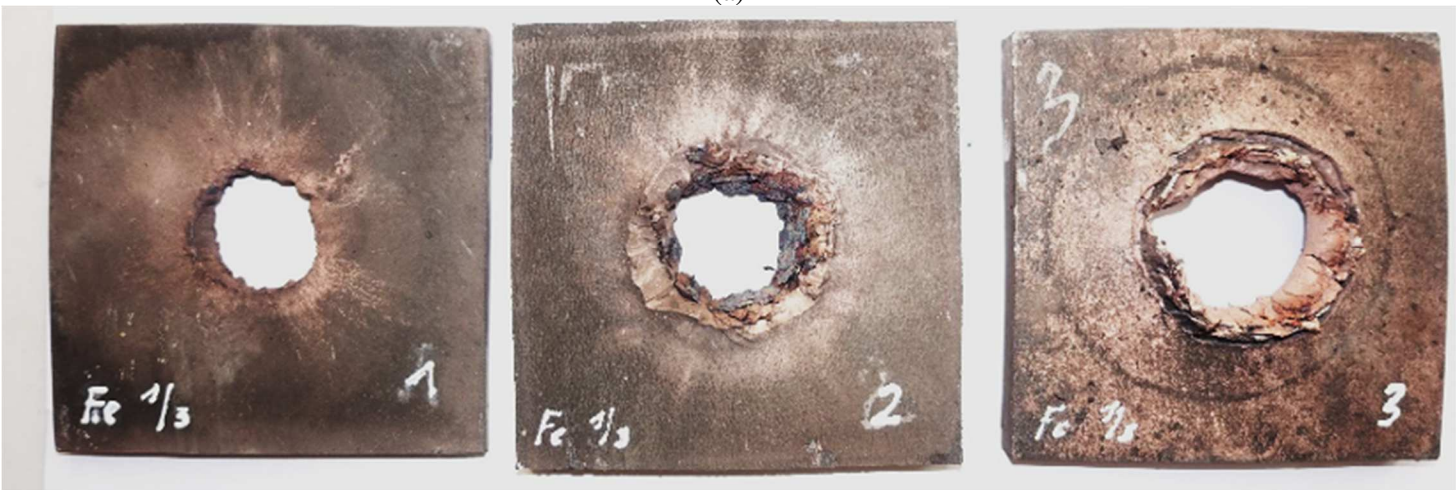
2 Test results for the SC with the filler in the form of a steel S355 cone

(a)



(b)

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(c)

Figure S2. Penetration of armored plates produced by the cumulative jet generated by the PG-7WM SC with the steel S355 filler in the form of a cone with a height of $h = (1/3)H$: inlet (row (a)) and outlet (rows (b) and (c)); from the left: plate 1, 2, 3 and – only in row (a) – witness plate

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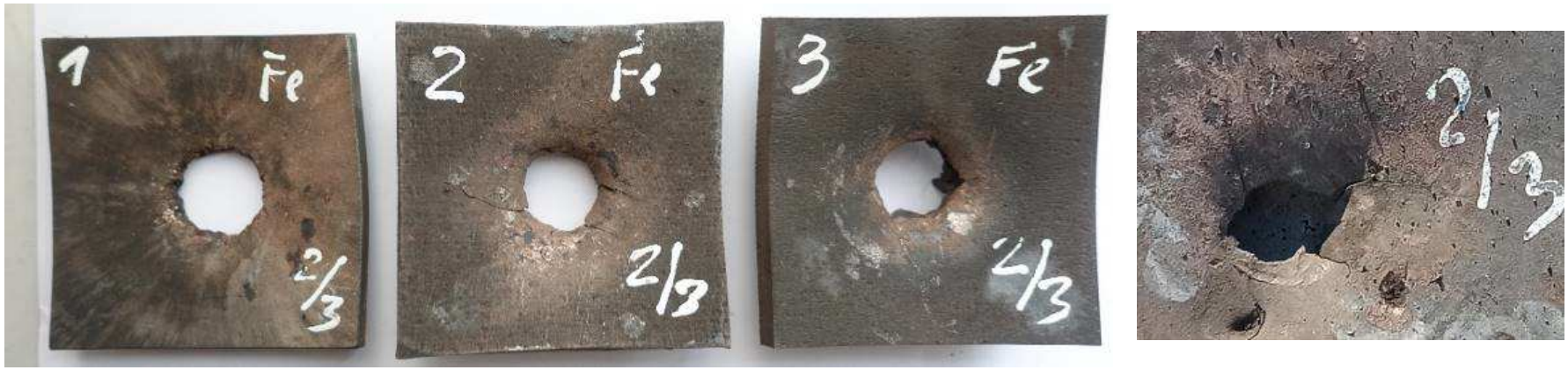

(a)

(b)

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(c)

Figure S3. Penetration of armored plates produced by the cumulative jet generated by the PG-7WM SC with the steel S355 filler in the form of a cone with a height of $h = (2/3)H$: inlet (row (a)) and outlet (rows (b) and (c)); from the left: plate 1, 2, 3 and – only in row (a) – witness plate

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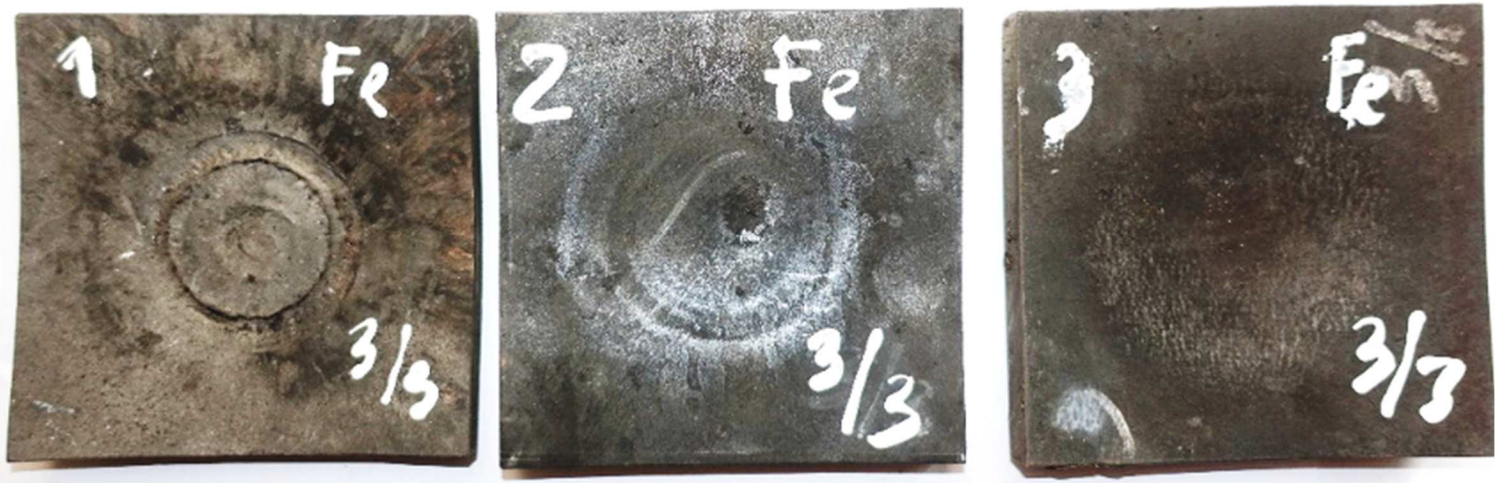

Figure S4. Domes in the armored plates, from the side of the incoming cumulative jet, produced by the cumulative jet generated by the PG-7WM SC with the steel S355 filler in the form of a cone with a height of $h = H$; from the left: plate 1, 2 and 3

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3 Test results for the SC with the filler in the form of a copper (Cu) cone

(a)

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(b)

(c)

Figure S5. Penetration of armored plates produced by the cumulative jet generated by the PG-7WM SC with a Cu filler in the form of a cone with a height of $h = (1/3)H$: inlet (row (a)) and outlet (rows (b) and (c)); from the left: plate 1, 2, 3 and witness plate

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(a)

(b)

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(c)

Figure S6. Penetration of armored plates produced by the cumulative jet generated by the PG-7WM SC with the Cu filler in the form a cone with a height of $h = (2/3)H$: inlet (row (a)) and outlet (rows (b) and (c)); from the left: plate 1, 2, 3 and witness plate

Figure S7. Domes in the armored plates, from the side of the incoming cumulative jet, produced by the cumulative jet generated by the PG-7WM SC with the Cu filler in the form of a cone with a height of $h = H$; from the left: plate 1, 2 and 3

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4 Test results for the SC with the filler in the form an aluminium (Al) cone

(a)

(b)

Figure S8. Penetration of armored plates produced by the cumulative jet generated by the PG-7WM SC with the Al filler in the form of a cone with a height of $h = (1/3)H$: inlet (row (a)) and outlet (row (b)); from the left: plate 1, 2, 3 and witness plate

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(a)

(b)

Figure S9. Penetration of armored plates, as well as changes in the witness plate, produced by the cumulative jet generated by the PG-7WM SC with the Al filler in the form of a cone with a height of $h = (2/3)H$: inlet (row (a)) and outlet (row (b)); from the left: plate 1, 2, 3 and witness plate

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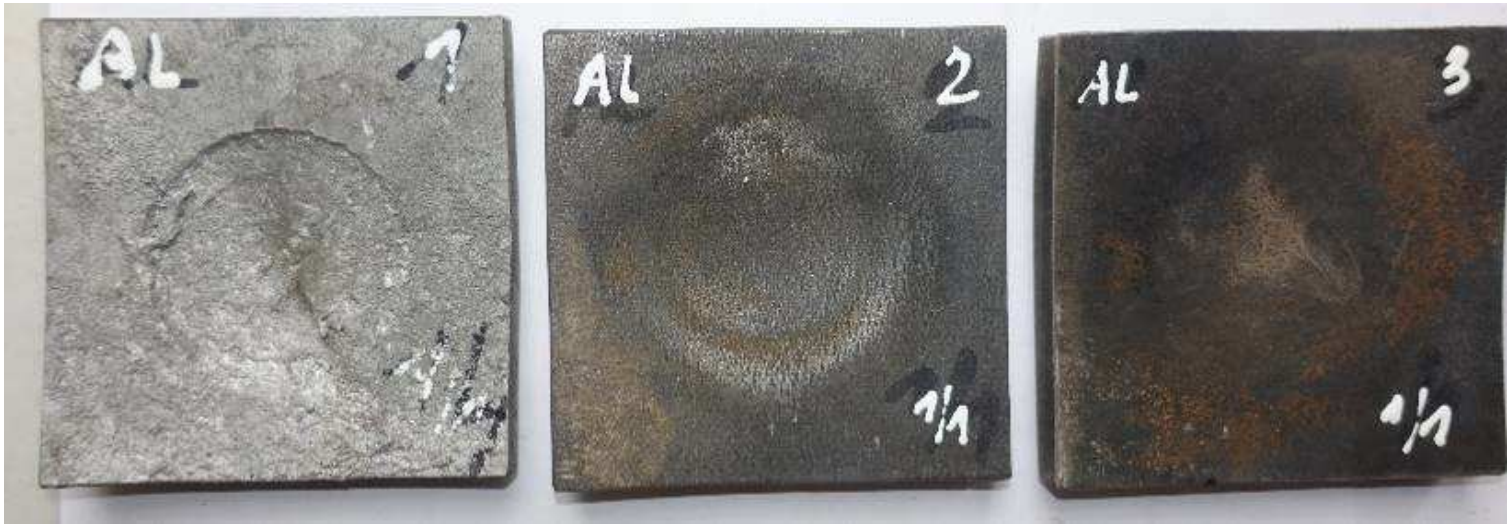

(a)

(b)

Figure S10. Domes (row (a)), from the side of the incoming cumulative jet, as well as penetration craters (row (b)), in the armored plates produced by the cumulative jet generated by the PG-7WM SC with the Al filler in the form of a cone with a height of $h = H$; from the left: plate 1, 2 and 3

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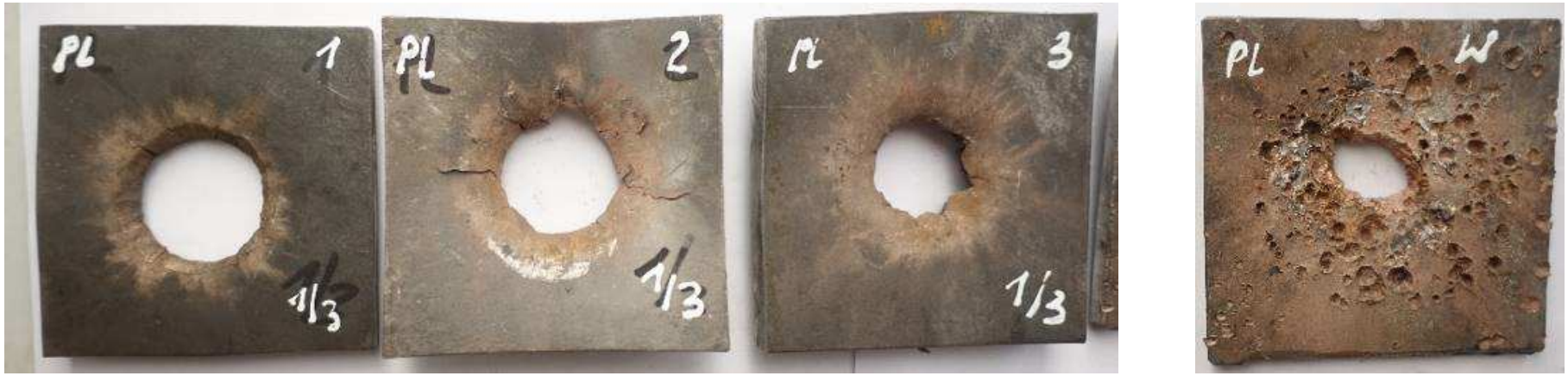
5 Test results for the SC with the filler of a polyoxymethylene copolymer (POM-C) cone



(a)

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(b)

Figure S11. Penetration of armored plates produced by the cumulative jet generated by the PG-7WM SC with the POM-C filler in the form of a cone with a height of $h = (1/3)H$: inlet (row (a)) and outlet (row (b)); from the left: plate 1, 2, 3 and witness plate

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(a)

(b)

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(c)

Figure S12. Penetration of tested armored plates, as well as changes in the witness plates, produced by the cumulative jet generated by the PG-7WM SC with the POM-C filler in the form of a cone with a height of $h = (2/3)H$: inlet (row (a)) and outlet (rows (b) and (c)); from the left: plate 1, 2, 3 and – only in rows (a) and (b) – witness plate

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Figure S13. Domes in the armored plates, from the side of the incoming cumulative jet, produced by the cumulative jet generated by the PG-7WM SC with the POM-C filler in the form of a cone with a height of $h = H$; from the left: plate 1, 2 and 3

Received: April 20, 2022

First published online: December 21, 2023